Field Report: Unified messaging boosts productivity. PAGE 32

Beyond Cool: PDAs go mission-critical. PAGE 43

IDG.net

COMPUTERWORLD

THE NEWSPAPER FOR IT LEADERS ■ WWW.COMPUTERWORLD.COM

NOVEMBER 4, 2002 ■ VOL. 36 ■ NO. 45 ■ $5/COPY

Ruling Resolves User Uncertainty

Microsoft rivals angered by judge's 'rubber stamping' of DOJ settlement

BY PATRICK THIBODEAU
WASHINGTON

Microsoft Corp. is no longer facing its worst fear: the unbundling of Windows. And it's on firmer ground to plan product strategies as a result of last week's court ruling.

Microsoft isn't out of danger — the company faces legal action in Europe and private antitrust cases. But U.S. District Court Judge Colleen Kollar-Kotelly's decision Friday came down so decidedly in favor of the company and the settlement reached with the U.S. Department of Justice that further legal challenges by the nonsettling states are unlikely.

MICROSOFT RULING

Microsoft can therefore operate with a greater degree of certainty with customers, business partners and competitors. And that knowledge came none too soon for some users.

"We all know Microsoft isn't perfect. IBM is not perfect. No one is perfect. I want it to be over," said Steve Sommer, CIO at Hughes, Hubbard & Reed LLP, a law firm in New York.

Sommer said his chief concern is that the decision "doesn't slow down research and development and the innovation" that's due with Microsoft's Trustworthy Computing initiative and .Net technologies.

Other users lashed out at the ruling.

"Obviously, we would like [Microsoft] to open as much code as possible to keep competition alive," said Rick Peltz, CIO at Marcus & Millichap Real Estate Investment Brokerage Co. in Encino, Calif. "What it sounds like to me is [the judge] chose not to do anything" after delaying the original settlement for a year.

Kollar-Kotelly in fact gave little to the states, and rejected all their major remedy demands, including making Internet Explorer open-source and porting Office to rival operating systems.

Groups representing competitors were disappointed with the outcome.

"It's a rubber stamp," said Ed Black, who heads the Com-

Microsoft, page 6

SPECIAL REPORT

IBM Throws Weight Behind Utility Model

But users, analysts caution that road to 'on-demand' computing will be rough

BY JAIKUMAR VIJAYAN
NEW YORK

IBM's $10 billion "on-demand" initiative announced by CEO Samuel J. Palmisano here last week echoes efforts by rivals to help companies deploy IT as a utilitylike service that can quickly expand or contract with business needs.

OUR TAKE
Kick the tires hard on this one, says Maryfran Johnson.

But getting to such a flexible — and ostensibly more cost-effective — architecture will take time and require a radically different approach to buying and using computer systems, users and analysts said.

"This is all wonderful to talk about in theory," said David Krauthamer, MIS director at Advanced Fibre Communications Inc., a manufacturer of telecommunications equipment in Petaluma, Calif. But in reality, the task of moving to it is "incredibly complex," Krauthamer added.

Still, the concept is an alluring one.

"Companies are tired of making one-off investments in IT," said Ted Schadler, an analyst at Forrester Research Inc. in Cambridge, Mass. As a result, "there is a shift going on toward a commoditization of the infrastructure," he said. "It's

On-Demand, page 61

Economics Guiding IBM

Declining revenue, commoditization lead to new strategy

BY JAIKUMAR VIJAYAN

CEO Samuel J. Palmisano's plan to steer IBM on a new course comes at a crucial time for the company.

Though IBM is perceived to be faring better than its struggling rivals in the current sluggish economy, it's facing many of the same challenges, analysts said.

Revenue has been declining, and profits have been coming under growing pressure. Though the com-

Economics, page 61

IBM CEO Samuel J. Palmisano

No. 2 Bank May Outsource IT

Sources say IBM or EDS could win J.P. Morgan Chase deal

BY THOMAS HOFFMAN

Sources last week said J.P. Morgan Chase & Co. is weighing a decision to outsource the bulk of its IT operations, a deal that one insider noted could rank second in size and scope to the $40 billion contract signed in 1996 by General Motors Co. and Electronic Data Systems Corp.

Six sources, including two IT managers at New York-based J.P. Morgan Chase, said outsourcing discussions are in progress at the nation's No. 2 bank. Multiple sources identified IBM and Plano, Texas-based EDS as the top two contenders for the contract.

One data center manager at the bank, which has $742 billion in assets, said senior executives have "gone back and forth" on the possibility of outsourcing IT over the past few months. "One month we're about to move forward with it, and the next month it's put on hold again," the manager said. Like the other sources, he asked not to be identified.

A database administrator at

J.P. Morgan, page 16

NEWSPAPER

Make every step count for more.

Nokia security appliances simplify network security.

Pre-installed, pre-configured and ready to go.
Whether they're being used for VPNs, firewalls, intrusion protection, or Internet traffic management, Nokia appliances are delivered ready for implementation. They're compatible with any IP network. Often, the only on-site requirements are powering up the appliance, connecting it to the network, and entering the correct IP address.

Nokia security appliances are designed for full remote management.
Easy-to-use GUI-based interfaces offer a full overview of security deployment, or a drill-down to the details, anytime. Deep collaboration with partners like Check Point Software Technologies, Internet Security Systems and F5 helps coordinate all the capabilities of their applications. So our customers can respond to internal and external threats, by upgrading or redeploying their equipment, quickly and more easily than ever before.

First Call-Final Resolution support eliminates the usual finger-pointing.
It's another way that our ongoing partnerships give our customers greater peace of mind. To download case studies, details and more, just visit **www.nokia.com/ipsecurity/na.**

NOKIA

CONNECTING PEOPLE

It's so far forward, it's a shame to call it backup.

ARCserve v9 is here

Apparently the word is out everywhere. BrightStor™ ARCserve® Backup is among the most reliable and widely used backup solutions in the world. In fact, hundreds of thousands of people rely on BrightStor ARCserve Backup technology to protect their critical servers. Now we've created BrightStor™ ARCserve® Backup v9, the most advanced version ever. As part of the BrightStor™ line of storage management solutions, BrightStor ARCserve Backup v9 is amazingly powerful yet one of the simplest to use and easiest to install solutions out there. In fact, most users can perform their first backup within 20 minutes of start-up. And that means it's the perfect backup software choice for, well, just about everyone. ca.com/brightstor/arcserve9

BrightStor™ ARCserve® Backup ca Computer Associates™

© 2002 Computer Associates International, Inc. (CA). All rights reserved.

CONTENTS

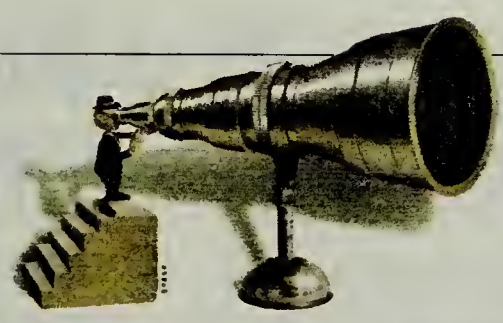
11.04.02

Q&A: Jump Ball!

In the Management Section: For John McKinley, CIO at Merrill Lynch, every IT service is a "jump ball" that's up for grabs, and managing strategic service providers is a new core competency. **Page 46**

A View to Savings

In the Technology Section: Significant cost reductions can be gained by having a real-time view of operations through data integration, say manufacturers that have implemented the approach. **Page 29**



NEWS

6 **IT managers** should look beyond cutting costs to prove the worth of technology investments, say CIOs.

6 **A set of wireless LAN** security specifications announced by the Wi-Fi Alliance completes an initiative started by Microsoft and other vendors.

7 **More companies are** expected to create central application integration teams during the next three years.

7 **BEA Systems today** ships software that can be used to gain access to and view data from disparate systems.

8 **NIST releases** a set of security guidelines for federal agencies that it says can also be used by the private sector.

8 **Changes are coming** for ICANN as it tries to ease the tension in its ranks.

10 **Cybersecurity czar** Richard Clarke wants federal funding for research aimed at improving Internet protocols.

12 **Oracle beefs up** its presence at its independent user group conference, where users differ on whether the company has improved support.

12 **Attendees at Storage** Networking World say multivendor SANs can provide big financial returns. But managing them isn't easy, they caution.

16 **Nortel Networks** unveils a new marketing strategy.

TECHNOLOGY

32 **Field Report: Unified Messaging Boosts Productivity.** Centralized access to fax, voice and e-mail messages creates efficiencies, but unified messaging systems require substantial infrastructure changes.

36 **QuickStudy: Scale-Free Networks.** These networks, which include the Internet, differ from random networks in that some of their nodes are very connected hubs, a fact that changes the way the network operates, decays and responds when attacked.

38 **Security Journal: Experts Stumble on PKI Security Project.** Vince Tuesday's attempt to rework his company's public-key infrastructure demonstrates that even high-priced hired guns should be carefully evaluated.

MANAGEMENT

43 **Case Studies: Beyond Cool.** Cost-conscious IT managers are deploying cheaper, easier-to-use PDAs to perform critical tasks. Analysts expect PDA use for business applications to increase significantly during the next 18 months.

52 **Trading Places.** Looking to better merge business and technology objectives, more companies are cross-training their employees to the point where it's not always easy to tell the sales representatives from the IT pros.

OPINION

10 **On the Mark: Mark Hall** uncovers new products from Ariba and Closedloop, among others, and chats with a critic of Salesforce.com.

24 **Maryfran Johnson** counts three vendors that now tout the next new thing — utility computing. She advises you to guard your wallet.

24 **Pimm Fox** looks closely at the "free" tools in IBM's AlphaWorks project.

25 **Michael Gartenberg** offers four ways to turn even disgruntled users into your biggest boosters.

40 **Robert L. Mitchell** asks why Microsoft doesn't make the Windows 2000 Professional Gold Standard baseline security template part of its install default.

54 **John Berry** says deploying new systems entails changes in workflows, business processes and job responsibilities, all of which should be figured into the initial business case for the IT investment.

62 **Frank Hayes** reminds us that even journalists can find unlinked, proprietary information on Web servers when companies don't take simple precautions to protect it.

DEPARTMENTS/RESOURCES

News Briefs 10, 14
Letters 25
Company Index 60
How to Contact CW 60
Shark Tank 62

ONLINE

WWW.COMPUTERWORLD.COM

Complete Microsoft Coverage

NEWS RESOURCES: For additional news and analysis of Friday's Microsoft remedy ruling, head to our special coverage page, where you'll find more stories about the judge's decision as well as archives of our past coverage. **QuickLink a2660**

What Do You Think?

FORUMS: Weigh in on the remedy ruling, and read what others have to say in our discussion forum. **QuickLink a2650**

Wireless Do's and Don'ts

KNOWLEDGE CENTER HOW-TO: Online editor at large Brian Sullivan writes up a tips list for developing wireless applications. It's based on a presentation at the Enterprise Wireless Forum by Meryl Enerson of Enervision Media. **QuickLink 34074**

Forgotten Issue

KNOWLEDGE CENTER: As voters go to the polls this week, privacy will be a forgotten topic, writes columnist Jay Cline. Why? Because consumers may worry about it, but they aren't willing to go to a lot of trouble to do something about it. **QuickLink a2670**

Web Roundup

KNOWLEDGE CENTER: Our Development Center WebLog is now featuring links to articles that focus on Web site development. Read "Ten Easy Ways to Break Your Web Page," and "Web Site Redesign Without a Nervous Breakdown." **QuickLink k2350**

What's a QuickLink?

On some pages in this issue, you'll see a QuickLink code pointing to additional, related content on our Web site. Just enter that code into our QuickLink box, which you'll see at the top of each page on our site.

ONLINE DEPARTMENTS

Breaking News
QuickLink a1510

Newsletter Subscriptions
QuickLink a1430

Knowledge Centers
QuickLink a2570

The Online Store
QuickLink a2420

Continued from page 1

Microsoft

puter & Communications Industry Association in Washington. "It's a shame; it's a loss for innovation. It's such a bad decision that it leaves good grounds for appeal."

Legal experts said the one-sided decision will make it difficult for an appeal to succeed. "An appeal is almost a fruitless effort," said Hillard Sterling, an antitrust attorney in Chicago. "Appellate courts almost uniformly affirm these types of remedy decisions. This decision is virtually bulletproof."

Microsoft has already taken steps to comply with the settlement, giving PC makers more flexibility and uniform terms, and application developers broader access to Windows interfaces and protocols, said analysts.

"A big win for Microsoft, and we expect very few changes," said Tom Bittman, an analyst at Gartner Inc. in Stamford, Conn. "They've already adopted a lot of the behavioral changes internally. We expect to see very few changes from this ruling, per se. So don't expect something different tomorrow from Microsoft. Those changes have already been made."

In a statement, Microsoft called the settlement "a tough, but fair, compromise." It added that the settlement imposes significant requirements, but it "enables us to continue to innovate and to create products that address the changing needs of our customers."

Friday's ruling calls for Microsoft to form a compliance committee that includes its board members. Paul Neilson, CIO at Monster.com in Maynard, Mass., questioned the prudence of that decision.

"The fox is watching the chicken coop," he said. "And we know that this fox raids the chicken coop." ◗

Maryfran Johnson, Carol Sliwa and Todd R. Weiss contributed to this report.

CIOs Try New Ways to Demonstrate IT's Value

Conference attendees say IT managers need to focus on more than savings

BY THOMAS HOFFMAN
NEW YORK

IT LEADERS CAN PROVE the value of technology investments to senior management by shifting the perception that IT is a cost center and focusing on how it can help companies achieve top-line revenue growth, said CIOs at a conference held here last week.

One good way to do that is to look beyond some of the more obvious areas to identify opportunities for deriving benefits from IT, they advised.

That's what James H. Noble envisions at Philip Morris Co. Dissatisfied with the standard approaches to running an IT organization, Noble, CIO at the New York-based consumer products and cigarette company, convinced senior management and business unit leaders to create a shared services organization that gives profit-and-loss responsibilities to Philip Morris' IT operations.

CIOs "are all tired of begging around with a tin cup" trying to get business managers to fund IT projects, Noble said. What Philip Morris is doing will let the company's technology managers look beyond merely "squeezing costs out of IT," he explained, speaking at the conference sponsored by the Society for Information Management in Chicago.

For example, Noble's group is setting up a Web-based "store" that business managers could use to shop for IT services from the shared services operation. Users of the Web site also will be able to compare the support costs charged by the internal group with IT benchmarking data supplied by Meta Group Inc. in Stamford, Conn.

The operating model adopted by Philip Morris should make it possible for the shared services organization to demonstrate lower costs than vendors that are saddled with cost-of-sales overhead, Noble said. It has also helped him "raise the agenda of the CIO to the board level" so he can debate IT investment priorities with other executives, he said.

Hidden Advantages

Philip Morris CIO James H. Noble said his company's new approach to IT should provide these not-so-obvious benefits:

- A subtle centralization of IT operations
- Improved technology standardization
- Increased purchasing power
- Better identity and branding for IT
- More respect for IT from business managers

Other Approaches

Shelley Leibowitz, managing director and CIO at Morgan Stanley Dean Witter & Co., has taken a different approach to help prove the value of IT to top executives at the financial services firm. Leibowitz said she's leveraging co-sourcing and outsourcing arrangements to save money and focus on core competencies while diversifying the IT support provided to the company's users.

A case in point: New York-based Morgan Stanley struggled in the past with quality assurance and systems testing that was done in-house, said Leibowitz. But by outsourcing those functions to a group of vendors on a project-by-project basis, Morgan Stanley has seen the quality of the work "greatly improve," she added.

New York University CIO Marilyn McMillan said the school's IT department has set up a Web-based educational portal for internal users in a project that began two years ago. Planned IT deliverables are "set on a schedule, like a vendor product," she said.

That approach helped McMillan earn credibility with senior management and secure funding for new iterations of the portal, which is now on Version 5.0. McMillan said she recently also gained approval for an additional "six-figure investment" that will be used to add workflow capabilities for end users to access administrative applications through the portal. ◗

Wireless LAN Vendor Group Looks to Improve Security

New specs target WEP shortcomings

BY BOB BREWIN

A group of wireless LAN technology vendors last week detailed a set of interim specifications designed to beef up security through the use of harder-to-break encryption keys and an industrywide user authentication plan.

The specifications, called Wi-Fi Protected Access (WPA), were announced by the Mountain View, Calif.-based Wi-Fi Alliance trade group. The move is the culmination of an enhanced wireless security initiative that was started earlier this year by a group of vendors, including Microsoft Corp. and Cisco Systems Inc. [QuickLink 33010].

Dennis Eaton, the Wi-Fi Alliance's chairman, said he expects vendors to start rolling out products featuring key components of WPA in February. Among the companies that announced plans to offer WPA-compliant products were Cisco, Hewlett-Packard Co. and Proxim Corp., a Sunnyvale, Calif.-based maker of wireless LAN hardware devices.

The specifications include a built-in mechanism to authenticate the identity of wireless LAN users based on the Extensible Authentication Protocol.

WPA also replaces the static encryption keys incorporated into the existing Wired Equivalent Privacy (WEP) protocol with harder-to-crack dynamic keys based on the Temporal Key Integrity Protocol (TKIP), the alliance said. TKIP is part of a draft 802.11i standard that will supersede WPA but isn't expected to be approved by the Institute of Electrical and Electronics Engineers Inc.'s standards body until 2004.

John Pescatore, an analyst at Gartner Inc. in Stamford, Conn., said the WPA announcement marks the industrywide acceptance of the Safe Secure Networks project launched by Microsoft, Cisco and other vendors. That effort first came to light last month.

Pescatore said corporate IT departments with hundreds or thousands of wireless LAN users could face a daunting task if they have to upgrade the client software on mobile computers to add WPA-compliant capabilities. But upgrading wireless LAN access points should be a relatively easy task that can be managed centrally, he said. ◗

NO CHANGES

The WPA specifications aren't expected to do much to protect users of public-access Wi-Fi LANS.

QuickLink 34073
www.computerworld.com

Central Application Integration Teams Expected to Proliferate

But political challenges may await IT managers

BY CAROL SLIWA
CHICAGO

A growing number of large corporations are finding an effective, sensible means of untangling their application integration "spaghetti" mess: creating central teams to do the untangling.

At its Application Integration and Web Services Conference here last week, Gartner Inc. said it expects more than 25% of large enterprises to forge central integration competency centers during the next three years, in addition to the 25% that have already done so.

But companies that elect to take that approach to lessen development time and reduce redundant technologies may find that they will also need some time to smooth out the prickly turf battles that may emerge as they try to shift a responsibility that has traditionally fallen to their application development groups.

"You're talking about changing the IS organization, so you're creating winners and losers," said Gartner analyst Roy Schulte. "The hardest thing to do is stop thinking of integration as part of a particular project and start thinking of this project as part of the enterprise system of systems."

Ken Dschankilic, manager of integration architecture at Canadian Tire Corp. in Toronto and a presenter at last week's conference, told a packed audience that the biggest organizational issue his company's core competency center faced was educating senior management and the application teams about "why we should exist."

MORE APP DEV
Go online to read more about application development:
QuickLink k1100
www.computerworld.com

"The mind-set there was we were intruding on application development, as opposed to providing value," he said.

But the integration group has been gradually building converts since its first project, which involved populating product data into a Manugistics Inc. application. By the time the second project rolled around, Dschankilic could tell the programmer group that half the required development was done, thanks to his center's prior work.

Yet even after five years in existence, the core competency center still encounters some pockets of resistance. Dschankilic said one application team that "despises" his group and its technology built a point-to-point interface "under the covers."

So Dschankilic computed how much time and money had been spent building that interface, since his group already had the interface in its inventory. Once that was determined, he said, "their management team said, 'You know, we've got a problem here.' "

JUST THE FACTS

Canadian Tire's Core Competency Center

- **Maintains** all integration documentation
- **Performs** and owns detailed design for each interface
- **Constructs** middle pieces of the interfaces
- **Supports** what it builds
- **Establishes** best practices
- **Performs** integration broker marketplace evaluations
- **Does** MQ administration

Now Dschankilic's group gets involved in the system development cycle to try to nip those sorts of problems in the bud. Dschankilic also sits on a recently formed technology review committee, along with a technical architect and an application architect, to oversee new application projects.

"The application team should be delivering functionality to their end users, not worried about the plumbing underneath," Dschankilic said. He advised his peers to tell their application development teams that integration teams aren't "replacing their jobs, but making their life easier."

Schulte said Gartner has been recommending for at least three years that companies create an enterprise integration competency center. It has taken six years for about 25% of large enterprises to do so, he said.

But Schulte expects the pace to pick up considerably during the next three years, as more companies purchase integration brokers. Gartner predicted that more than 50% of all large enterprises — companies with $1 billion or more in revenue — will have an integration competency center by the end of 2005.

Derek Gee, a vice president at Ameriquest Mortgage Co. in Orange, Calif., said his firm's new CIO ordered the creation of one after he spotted developers building the same functionality into separate applications. "Because we're in the beginning stages of implementing a new strategic architecture, my concern is that this is going to add development time," he said. "I need to sell them on the long-term benefits of what this architecture's going to give them."

BEA Releases Tool for Consolidated Data View

Developers can view data from disparate systems

BY CAROL SLIWA

BEA Systems Inc. today will ship software that developers can use in concert with its WebLogic application server to gain access to and view data from disparate systems in a consistent manner.

Once connections to the systems are made, the new Liquid Data software queries the data sources and automatically converts the data into an XML representation. That in turn provides developers with a unified, reusable view of their various data sources, said Ajay Patel, vice president and general manager of BEA Liquid Data.

Developers can then repurpose the data for use in other applications — especially those that need up-to-date, consolidated views of information, such as customer service applications or business-to-business portals, said Pavey Purewal, a senior product marketing manager at San Jose-based BEA.

In the Abstract

"Liquid Data creates an abstraction between what the application needs and what the actual data representation is. Developers just use the abstraction. They don't worry about what the data sources are or even where they are. The WebLogic layer takes care of that," said John Parkinson, chief technologist for the America region at New York-based Cap Gemini Ernst & Young, a global systems integrator that will be co-marketing and training developers to use BEA's new product.

NEW PRODUCT

BEA's Liquid Data for WebLogic

WHAT IT IS: Software that delivers a unified view of disparate enterprise data

WHEN IT SHIPS: Today

WHAT IT COSTS: $25,000 per CPU

WHAT IT WORKS WITH: BEA WebLogic Platform 7.0;. Server 7.0; Integration 7.0; Portal 7.0

Parkinson said large organizations have struggled for decades "to have a single, comprehensive corporate data model, knowing where everything is and having everything consistently defined."

"It may sound easy, but it turns out to be very hard," Parkinson said, noting that much custom coding is required. "You explicitly convert data in one format to data in another format on an application-to-application basis, which is extremely expensive to maintain."

Cap Gemini Ernst & Young hasn't worked on any Liquid Data projects yet. According to Parkinson, the firm is seeing the most interest from companies that need to pull together data for customer service applications in call centers and for business intelligence purposes.

"Liquid Data is a visionary product. How far BEA itself is able to push it, we will see. It depends on the quality of the product," said Yefim Natis, an analyst at Stamford, Conn.-based Gartner Inc. "But the idea of the 'super API,' if you like, that allows a common view on heterogeneous data is right on.

"People don't want to go to tables, go to individual data records. What they want to go to is semantic data," Natis added. "They want to find data that is loosely coupled and not just be strictly locked into individual data structures."

Liquid Data sells for $25,000 per CPU. The price includes support for one year.

Guidelines Aim to Secure Government's IT Systems

NIST says draft recommendations also apply to private sector's security woes

BY PATRICK THIBODEAU
WASHINGTON

THE NATIONAL Institute of Standards and Technology (NIST) last week released the first set of draft information security guidelines intended to fix "inconsistent and flawed" IT security assessments by federal agencies. Those guidelines stand to benefit private companies as well.

The goal of the guidelines is to improve frequently faulted federal IT security by mapping out a best-practices approach to securing information systems. Several security experts who have reviewed the guidelines said that although they use terminology and refer to processes that may be unique to the federal government, they are nonetheless useful to the private sector.

Many private companies "are kind of haphazardly going along in securing their systems, and they are not applying any kind of guideline or standard," said Lou Abreu, manager of leveraged security services at Computer Sciences Corp. in El Segundo, Calif. Abreu said he "firmly believes" that the NIST guidelines will help private companies improve the way they approach security.

The guidelines appear to combine federal and industry best practices. The effort pulls together "information that has been scattered all over the place," said David Black, a computer security expert at Hamilton, Bermuda-based Accenture Ltd.

Charles R. Hudson Jr., an infrastructure security manager and senior security officer at Wilmington Trust Co. in Delaware, said the NIST guidelines could ultimately become mandates for regulated industries, such as financial institutions.

The private sector has practices comparable to those mentioned in the federal guidelines. For instance, rather than calling the final approval of a security assessment a "certification," a business might call it a "business assurance letter." In either case, it attests to upper management that systems meet a certain level of security, said Black.

The lack of a standard security approach at federal agencies has produced numerous security certification processes that are complex, outdated and costly. And it has resulted in assessments that "are often inconsistent, flawed and not repeatable with any degree of confidence," the NIST report stated.

Ron Ross, a NIST security expert who co-authored the guidelines, said a standardized process "allows federal agencies to better understand how their partners are dealing with the security issues."

"If you don't have a standard process or standard controls as the basis of that understanding, you're all working off different sheets of music," he said.

Gaithersburg, Md.-based NIST is seeking comment on the draft from anyone with an interest in corporate security.

One reason the government would like to hear from the private sector: "The federal government is more or less a microcosm," said Ross, explaining that the government faces many of the same challenges that the private sector does in disciplines such as logistics, medicine and finance. "We're all using the same basic information technology." ◗

NIST Gist

- **SECTION 1** concerns certification and accreditation.
- **SECTION 2** looks at system controls.
- **SECTION 3** examines verification procedures and techniques tied to each of the controls.

WHERE: *www.csrc.nist.gov/sec-cert*

COMPLETION DATE: Sometime next spring. In the meantime, NIST is seeking feedback from IT professionals.

ICANN Wraps Up Shanghai Meetings With Bylaw Changes

Internet body enacts reforms to ease rifts among its members

BY TODD R. WEISS

Reform is coming to the Internet Corporation for Assigned Names and Numbers (ICANN), the nonprofit group that runs the Internet's Domain Name System.

After four days of meetings in Shanghai last week, the Marina Del Rey, Calif.-based group's board of directors approved a wide-ranging set of bylaw changes. The reforms are aimed at addressing issues that have caused rifts among ICANN's members about the way the organization watches over the Internet.

Among the changes approved were a reduction in the number of board members from 18 to 15 and the creation of an ombudsman's office. The group will also establish the Country-Code Names Supporting Organization (CNSO) and dissolve the Protocol Supporting Organization, replacing it with a Technical Advisory Committee (TAC). ICANN also decided to change the name of the Domain Name Supporting Organization, which will now be known as the Generic Name Supporting Organization (GNSO).

M. Stuart Lynn, ICANN's president and CEO, said the meetings were "a major step forward on the reform trail" and will help the nonprofit group as it strives to be more responsive to complaints and criticisms from its members.

New Structure

The new ICANN structure will include three supporting organizations — the GNSO, the CNSO and the Addressing Supporting Organization — with four standing advisory committees of the board: the Governmental Advisory Committee, the TAC, the DNS Root Server System Advisory Committee and the Security Advisory Committee.

Some proposed reforms and amendments didn't make it into the final package, Lynn said. ICANN held a public forum Oct. 30, during which members and others could give their views on the proposed changes. After hearing those comments, ICANN made additional changes to reflect the suggestions, he said.

Among them: Reversal of a recommendation that would have stopped ICANN members from being able to vote multiple times on issues, depending on what membership subgroups they represent. Under existing rules, members get two votes on an issue if, for example, they are both an Internet service provider and a top-level domain (TLD) registry. Critics opposed a plan to limit each member to one vote, and the proposal was dropped, Lynn said.

With the bylaws and changes approved, ICANN plans to meet again in December in Amsterdam to put in place a transition plan, he said.

Also raised at the meetings was the possibility that some TLD holders may try to challenge ICANN next year for some of its administrative power [QuickLink 34005].

Some of those TLD holders said they may want to try to take over some of the administrative work now done by ICANN under a contract with the U.S. Department of Commerce. The so-called Internet Assigned Numbers Authority (IANA) maintains administrative contacts for the Internet, updates name servers and completes other administrative tasks. At the ICANN meetings, some TLD holders said they're thinking of making their own bid for the next IANA contract, which expires in March.

Lynn said the issue is evidence that "relations with the [TLD holders] always have their ups and downs."

However, while some TLD holders were looking into such a possibility, not all feel that way, he said. "It depends on who you want to believe," Lynn said. "We're going to move forward in a positive way." ◗

Changes for ICANN

Reforms include:

- **REDUCING** the size of the board from 18 to 15 members.
- **CREATING** an ombudsman's office.
- **ESTABLISHING** a Country-Code Names Supporting Organization.
- **REPLACING** the Protocol Supporting Organization with a Technical Advisory Committee.

STOP THE STOVEPIPING

The federal government is trying to get its agencies to adopt open standards:

QuickLink 34077
www.computerworld.com

Get the Price/Performance Advantage
With Oracle, Dell and Red Hat

"Those running Oracle, Dell, and Red Hat Linux have a price/performance advantage. Users can buy four 4-way Dell servers running Oracle and Linux with exceptional performance for less than a 12 or 16-way proprietary SMP system at a hefty savings."

Aberdeen *Group*

June 2002

DELL™

redhat.

Learn more about an Oracle certified configuration for Dell with Red Hat Linux Advanced Server.

ORACLE®

oracle.com/linux/dell
1.800.633.0567

Copyright © 2002, Oracle. All rights reserved. Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

BRIEFS

HP to Lay Out Its On-Demand Plans

Hewlett-Packard Co. this month plans to announce a road map for integrating its OpenView network management software with its Utility Data Center technology for on-demand computing. Nora Denzel, senior vice president of HP's software business unit, said new products that fit into the company's emerging on-demand strategy will be rolled out over the next few years.

EDS Plans to Cut Up to 5,500 Jobs

Electronic Data Systems Corp. reported weak third-quarter results and said it plans to cut its 138,000-employee workforce by up to 4% over the next few quarters. As many as 5,500 workers could be let go, EDS indicated. The Plano, Texas-based company said it also plans to shift at least 1,500 application development and client call center jobs to lower-cost "solutions centers" next year.

EMC, Dell Launch CX200 Disk Array

EMC Corp. and Dell Computer Corp. jointly announced an entry-level model of EMC's Clariion disk array line that Dell will manufacture at plants in Texas, Ireland and Malaysia. Dell has been reselling the Clariion arrays for the past year, but the new CX200 is the first device it will produce. EMC will also make the entry-level array, which has a storage capacity of up to 2.2TB.

Short Takes

St. Louis-based Emerson Electric Co. said it plans to standardize its 60-plus divisions on ORACLE CORP.'s E-Business Suite applications. . . . SUN MICROSYSTEMS INC. announced upgrades of its software for rehosting mainframe applications on its Unix servers.

MARK HALL ▪ ON THE MARK

Ariba, Closedloop Apps Force Companies to . . .

. . . change their organizational behavior, but neither vendor has sought input about their products from gurus in the field. Doug Barton, vice president of marketing at Redwood City, Calif.-based Closedloop Solutions Inc., says his company preferred to employ the "defining moment" approach (informal chats with users) to research how to best **prod workers to alter their sloppy financial-planning habits.**

And Martin Boyd, director of product marketing at Ariba Inc. in Sunnyvale, Calif., acknowledges that his company also skipped chatting with behavioral experts about its procurement management product, despite admitting that what it attempts to solve is "an organizational problem, not a price problem."

Nonetheless, both companies next week will press forward with major upgrades to their core product lines. Ariba's Analysis, Buyer, Content and Sourcing products will see significant improvements, primarily through tighter integration. And Closedloop's Exchange, Reporting and Analysis, SpendCap Manager and TopLine Manager programs will all be revamped in big ways. Plan for the turmoil to commence in December, when both companies' upgrades go gold. ▪ Zach Nelson scoffs at a recent comment made here [QuickLink 33689] by CEO Marc Benioff that Salesforce.com will have its accounting package ready soon. "It'll take four years, minimum," counters Nelson, president of San Mateo, Calif.-based competitor NetLedger Inc. "He's welcome to our swamp, but we're the biggest alligator in it." That swamp is the subscription-based online integrated accounting and CRM software market. Both Nelson and Benioff are used to carnivorous reptiles, being executive refugees from Oracle Corp. Although Oracle may compete with both companies on occasion for midsize companies' business, **CEO Larry Ellison is hedging his bets three ways,** you might say, since he's personally been an initial investor in both NetLedger and Salesforce.com.

Hot Stuff

Net performance and security tester FlameThrower II Release 5 gets a mid-month release from Antara.net LLC.

Merant's Web content management software Merant Collage 3.1 ships today.

▪ Will **Java jockeys jump joyfully** with tomorrow's release of Borland JBuilder 8 and Optimizeit Suite 5? Probably, since Scotts Valley, Calif.-based Borland Software Corp.'s JBuilder is a hugely popular development tool. But much of the celebrating will be about the new Automatic Memory Leak Detector in Optimizeit. Memory leaks are the bane of performance-minded Java programmers.

▪ By the end of Q4, **COM middleware gets the boot** in favor of .Net when OpenNetwork Technologies Inc. in Clearwater, Fla., releases DirectorySmart 4.8.1, its network directory and security management software. The upgrade will also improve centralized control of provisioning systems on the network. ▪ **As if they aren't cocky already,** your company's marketing people will be able to bypass IT to create their own custom Web analytic reports that can slice, dice and presumably splice together e-commerce buyers. They can do that using Bellevue, Wash.-based digiMine Inc.'s Customer Segment Manager, which works with the company's online data warehouse. Available today at $5k per month, it's probably worth it to keep the flash-and-dash crowd out of your hair. ▪ Who cares about real-time operating systems (RTOS)? You do. Or should. **RTOS devices are working their way up the tech food chain** into IT's domain, says Paul Zorfass, an analyst at IDC/First Technology Inc. in Framingham, Mass. That's why this week's announcement by Wind River Systems Inc. in Alameda, Calif., the $350 million "head and shoulders market leader," might catch your eye. Wind River is releasing four RTOS packages targeting vertical technologies, two of keen interest to IT: network equipment and server appliances. According to Wind River Chairman and co-founder Jerry Fiddler, while OEMs will do the bulk of programming for these systems, the integrated development environment that comes with the products means IT will end up customizing them as well. Zorfass agrees, adding that Microsoft Corp. is working its way "rather successfully" down the tech food chain with Windows CE in order to extend Windows apps into the RTOS world. One wonders **how the blue screen of death will look in real time.** ◗

Security Gains Sought for Net Protocols

Cybersecurity czar calls for funding

BY MATT HAMBLEN

National cybersecurity chief Richard Clarke last week called for the addition of a "few million" dollars in annual federal funding for independent research aimed at improving the security and reliability of Internet protocols.

In a conference call, Clarke said he has talked with members of the Internet Engineering Task Force about the idea of creating a test bed that would simulate a large Internetlike system.

The test bed could be used to try out new protocols and routing designs for the Domain Name System (DNS) and the Border Gateway Protocol (BGP), which is used in millions of core routers around the world.

"Systems like DNS and BGP could be the source of intentional or malicious acts, or the source of instability that could flop the Internet," Clarke said. "Frankly, we see a lot of BGP flopping all the time." That, he added, "creates minor pockets of instability in the Internet."

Clarke said BGP can become unstable when human errors in the protocol's routing tables, which are akin to massive phone books, are sent back and forth by routers. BGP is also vulnerable to attack because it doesn't use authentication or encryption, he said.

Packet Design LLC, a Palo Alto, Calif.-based start-up, today plans to announce software designed to enhance the performance of BGP. The technology, called BGP Scalable Transport (BST), uses a "flooding" approach in which a message is sent to a neighboring router and then passed from that device to another router, and so on. The BST software is being marketed to router vendors, said Packet Design CEO Judy Estrin. The software is due for release next month. Pricing starts at $100,000.

John McConnell, an analyst at McConnell Associates in Boulder, Colo., described BST as "very promising technology." But, he added, "you need widespread adoption by the service providers for it to make a difference." ◗

Autonomy the Market #1*...

Setting the Standard for High-end Categorization, Retrieval and Information Systems

www.autonomy.com

Automatically Powering the Information behind: Portals, Enterprise Search, CRM, Expertise Management and OEM

Since its beginnings in 1996, Autonomy has risen to the number one slot, leading the market for advanced categorization, retrieval and expertise management. Autonomy's open philosophy, combining its award winning advanced automation techniques with full legacy manual operations, gives customers the winning choice. **Perhaps that's why Autonomy is the standard for more and more of the world's leading companies.**

Whether Autonomy is keeping your portal updated with relevant information from across the enterprise, or allowing your CRM system to understand what your customers are actually telling you in those emails and phonecalls, Autonomy is behind the most demonstrable ROI - all built on bringing the benefits of automation to your business.

At the same time, Autonomy's abilities are being harnessed by the world's leading software companies to add Autonomy intelligence to their world-class products. **Leading software companies across all areas have chosen the next generation over the legacy.**

And we've only just begun. Contact Autonomy to find out more about our latest technologies for telephone searching and categorization, automatic clustering, video searching, parametric search and fully dynamic taxonomies.

Contact Autonomy and speak with the market leader.
Tel: 1-877-MYAUTONOMY or visit www.autonomy.com/marketleader

Autonomy®

making sense of an unstructured world

*Leader in software licence revenues for high-end categorization, advanced retrieval and expertise management, per information set forth in U.S. SEC filings and company conference calls.

Copyright © 2002 Autonomy Corp. All rights reserved. Other trademarks are registered trademarks and the properties of their respective owners.

Oracle Tries to Smooth Rocky Relations With User Group

OAUG president points to improved support, but some users aren't satisfied

BY MARC L. SONGINI

ORACLE CORP. last week showed a beefed-up presence at the fall conference of its independent applications user group, signalling that a well-publicized rift between the vendor and the group is continuing to mend.

Oracle and the Atlanta-based Oracle Applications Users Group (OAUG) have been feuding off and on during the past two years over how much support the company should provide for the two conferences that the user group sponsors each year (see box). But Oracle sent several executives to last week's event in San Diego and ran numerous technical sessions.

"The relationship is becoming solid again," said Tom Wyatt, the OAUG's president. "We are really seeing them deliver. Their participation in the conferences has picked up."

Wyatt, who is director of Oracle systems at Sitel Corp., a customer service outsourcing company in Baltimore, said Oracle is also improving the way it develops and supports its business applications. That's in keeping with promises made by Oracle officials at the OAUG's spring conference in May [QuickLink 30039].

Solving Problems

Oracle's support staff is taking a "more rounded approach" and working to analyze the root causes of technical problems, Wyatt said. Sitel runs Oracle's E-Business Suite 11.03 release and is currently testing the 11i version of the applications for a planned spring upgrade, he added.

Analysts said Oracle has made strides during the past year to ease the process of migrating to 11i, through steps such as automating its internal testing of the applications and creating upgrade templates to streamline work for users.

"These customer-centric initiatives are coming from the very top of the Oracle executive ranks, and this will certainly have a positive impact on Oracle's ability to support its customer base," said Tom Sweeny, research director at the Service & Support Professionals Association, a San Diego-based industry group.

But not everyone is fully satisfied. Pat Dues, a project officer for the Las Vegas city manager's office and chairman of the OAUG's customer support council, said Oracle still lacks a structured process that IT managers can use to request, prioritize and track software enhancements. The OAUG is trying to get a commitment for such a process from the company but hasn't had success yet, Dues said.

Melanie Bock, a San Francisco-based Oracle consultant and a past president of the OAUG, said that the sets of software patches being released by the company also remain a source of aggravation for some users.

"Oracle is reluctant to provide one-off patches for individual 11i bugs, of which there still are plenty," Bock said. But installing a full patch set may require wider software upgrades, she said. And drilling into Oracle's Web site for information on patch sets can be a "nightmare," Bock added.

Dues said the groups of patches, called minipacks by Oracle, should reduce testing and installation times for users. "But the problem with this is having to apply a full set of patches when only a minor one is needed," she said. ◗

Frayed Ties

APRIL 2000
The OAUG says no to a proposal to fold its conference into Oracle's AppsWorld event.

OCTOBER 2000
OAUG members are miffed by Oracle's diminished presence at the group's fall conference.

JUNE 2001
New talks between Oracle and the OAUG bog down over conference sponsorship.

OCTOBER 2001
Oracle agrees to an OAUG request to extend support for its 10.7 applications.

DECEMBER 2001
The two sides agree to take part in each other's conferences.

OCTOBER 2002
Oracle sponsors 20 presentations at the OAUG's conference, sends three executives.

IT Managers Give SANs A Qualified Thumbs-Up

Conference attendees cite ROI, but storage management remains an issue

BY LUCAS MEARIAN
ORLANDO

Early this year, mortgage lender Fannie Mae went live with a new primary data center and storage-area network (SAN) to address its sprawling storage needs. Now 1,150 of the company's 1,400 servers are attached to the SAN, which backs up 80TB of data weekly.

But Brian Cobb, vice president of systems engineering at Washington-based Fannie Mae, last week said he has yet to see a storage management platform that can handle his entire multivendor infrastructure. Nor has he found virtualization software that can pool all of his storage resources and serve them up in a utilitylike fashion to end users.

"We need to have improved interoperability and management tools," Cobb said, echoing a common refrain that was heard at the Storage Networking World conference here last week. The event, which drew about 2,150 attendees, was cosponsored by *Computerworld* and the Mountain View, Calif.-based Storage Networking Industry Association (SNIA).

Almost every IT executive who spoke about rolling out a SAN during the past three years said there has been a significant return on investment associated with the project. Users cited benefits such as simplified storage management and the ability to consolidate IT resources.

But some attendees said there are downsides to multivendor storage installations.

TECHNOLOGY TIME
IBM, Sun Microsystems and other vendors announced new products at Storage Networking World:
QuickLink 34096
www.computerworld.com

For example, Garrett Grainger, CIO at pencil and marker manufacturer Dixon Ticonderoga Co. in Heathrow, Fla., said during a panel discussion that data availability — specifically, "being able to recover when we have issues" — is his biggest concern. He said he's trying to switch to a single-vendor infrastructure in order to simplify that task.

Previously, Dixon Ticonderoga had a large mix of devices in its storage environment. But Grainger said that when IT problems prompted the company's vendors to engage in a round of finger-pointing, he had to hire a mediator to sort out the difficulties.

Storage vendors are taking steps to ease the complexity of managing mixed SANs. At last week's conference, a group of about 20 vendors demonstrated a multivendor storage network that was managed through a single interface based on specifications that are being developed by the SNIA [QuickLink 33924].

Products that support the specifications are expected to appear next year. But some conference attendees said they don't want to hear promises vendors won't be able to keep.

"Don't come in here and tell me you can do something and not be able to demonstrate it to my team," said Rick Peterson, vice president of IT operations and production services at DirecTV Inc., a satellite TV company in El Segundo, Calif.

Despite that warning, Peterson said he's confident that a pair of redundant multivendor SANs DirecTV began using in September will pay off. He declined to comment on the cost of the project but said he expects the SANs to produce an ROI within 20 months.

Peterson said he mitigated the risks of the SAN installation by doing intensive testing and collaboration with DirecTV's vendors, which include Hewlett-Packard Co., Houston-based BMC Software Inc. and Waltham, Mass.-based StorageNetworks Inc. ◗

The five business intelligence questions that Business Objects doesn't want you to ask.

1. Can you connect to all my structured and unstructured data sources, and publish the results with a browser?

2. How much time, money, and training is required to build and maintain a "universe"?

3. Can I create user-friendly dashboards immediately, right out of the box?

4. What are the typical training and consulting costs to deploy and support your products?

5. Why don't you offer a 2-Day Guarantee?

When you get tired of asking questions that don't get answers, visit www.brio.com/answers/cw. Or simply dial 1-877-BUY-BRIO (1-877-289-2746).

www.brio.com/answers/cw

usiness Performance Software Company™

ware, Inc. All rights reserved. Brio Software and the Brio Software logo are registered tradem Brio Software, I
product, or service names are the property of their respective holders. The guarantee progra subject to the term
set forth at http://www.brio.com/guarantee/cw.

BRIEFS

Microsoft Warns of Flaw in Win XP, 2k

Microsoft Corp. warned that an unchecked-buffer flaw in virtual private networking code that's natively supported by Windows XP and Windows 2000 could leave systems vulnerable to denial-of-service attacks. The company gave the vulnerability its highest severity rating and urged IT managers who provide services based on the Point-to-Point Tunneling Protocol to install a new software patch.

IBM Offers Tech Financing Deals

IBM announced a series of IT financing offers, including a 90-day deferral of payments, in a bid to spur purchases of its systems and software. The "triple zero" deferral offer would let qualified users put off any down payments, principal charges and interest costs on orders placed by Dec. 31, IBM said. The company is also offering financing rates as low as 4.2% on hardware products and 3.1% on software.

Unisys Adds Line of Packaged Servers

Unisys Corp. announced a series of preconfigured database servers that combine its ES7000 high-end systems with hardware and software from Microsoft, EMC Corp. and others. Blue Bell, Pa.-based Unisys said the packaged servers run Microsoft's SQL Server database and can support up to 9TB of data.

Short Takes

MICROSOFT upgraded two business applications that it acquired in its July purchase of Danish vendor Navision A/S. . . . A U.S. District Court judge in Texas rejected INTEL CORP.'s request to reconsider a ruling that Intel's Itanium processors infringe on patents held by Huntsville, Ala.-based Intergraph Corp.

Hacking Syndicates Threaten Banking

Many incidents go unreported, World Bank official says

BY DAN VERTON

THE NUMBER of organized hacking syndicates targeting financial institutions around the world is growing at a disturbingly fast rate. And so is the number of banks willing to pay these high-tech extortionists hush money to protect their reputations, according to a security expert at The World Bank.

Cases in which banks, brokerage firms and other financial institutions have quietly paid hacking syndicates extortion money are "extremely widespread," said Tom Kellermann, senior data risk management specialist at The World Bank in Washington. Kellermann, who co-authored a study on the electronic security risks facing the global financial community, presented the findings during an Oct. 29 online seminar sponsored by Cable & Wireless Internet Services Inc. in Vienna, Va.

The 127-page study details the growing security challenges facing the financial sector as a result of the industry's unprecedented dependence on the public telecommunications system, rapid adoption of wireless systems and outsourcing of operations to third parties.

And the growing dependency on Internet technologies that are linked to sensitive back-end systems, such as customer databases and real-time stock data, has made online extortion a major "safety and soundness issue" for the financial markets, Kellermann said.

80% Go Unreported

Kellermann cited reports from Framingham, Mass.-based IDC and Stamford, Conn.-based Gartner Inc. that indicate that roughly 80% of cybercrime incidents in the financial sector go unreported to law enforcement agencies.

Moreover, he contends that IT employees keep many of these incidents from senior banking executives "due to the reality that they may be fired." Banks don't report these incidents mainly because they want to maintain customer and investor trust, according to Kellermann.

At the same time, massive underreporting has created a vicious catch-22 for an industry that continues to struggle with dwindling budgets. "It has a magnifying effect because there's no actuarial data to justify the extra expense on security," said Kellermann. "We are losing this war."

Budget issues have also led banks and other financial companies to outsource operations. But that can have disastrous consequences for hundreds of banks at once if the hosting company doesn't implement proper security protections, Kellermann said. He cited an incident last year in which hackers penetrated the systems run by SI Corp., an Atlanta-based provider of electronic finance services to the financial industry. The incident led to the compromise of more than 300 banks, credit unions, insurance providers and investment firms simultaneously.

Coverups Not Common

Security experts and banking officials contacted for this story agreed that the vast majority of incidents go unreported. However, they said they aren't convinced that internal coverups by bank IT personnel are widespread.

"I don't think that security incident coverups are common," said Joe Busa, an IT manager at Citizens Bank in Providence, R.I. "It is very hard to cover a mistake completely from your peers."

According to Gartner analyst John Pescatore, all publicly traded companies are required by the Securities and Exchange Commission to report all events that could have a material effect on the business. However, "there have been very few computer security incidents serious enough to be classified as a material event," said Pescatore.

12 Layers of Adequate Security

1. Chief security officer
2. OCTAVE methodology*
3. Authentication
4. Firewalls
5. Intrusion-detection systems
6. Virus scanners
7. Policy management software
8. Vulnerability testing
9. Encryption
10. Proper system administration
11. Active content filtering
12. Incident response plan/ continuity of operations

*Operationally Critical Threat, Asset and Vulnerability Evaluation methodology for conducting threat assessments. Developed by CERT Coordination Center, Pittsburgh. See www.cert.org/archive/pdf/OCTAVEthreatProfiles.pdf

SOURCE: TOM KELLERMANN, SENIOR DATA RISK MANAGEMENT SPECIALIST, THE WORLD BANK

Lack of Incident Reporting Hinders FBI

Following last year's terrorist attacks, FBI Director Robert Mueller made the battle against cybercrime and cyberterrorism the bureau's No. 3 priority, behind counterterrorism and counterintelligence. But private-sector cooperation in that fight remains woefully inadequate, Mueller told a meeting of industry and government officials last week.

"We probably get one-third of the [cybercrime] reports that we would like to get," said Mueller, speaking at the invitation-only National Forum on Combating e-Crime and Cyberterrorism, sponsored by the Arlington, Va.-based Information Technology Association of America (ITAA) and El Segundo, Calif.-based Computer Sciences Corp.

"You're not enabling us to do the job," said Mueller, referring to the lack of incident reporting coming out of the private sector. Unless more companies step forward and cooperate with law enforcement on prosecuting cybercrimes, the FBI's analysis and prediction capability won't improve, nor will the overall state of security on the Internet, he said.

"We understand that there may be privacy [and public relations] concerns," said Mueller. "We, as an organization, have learned that you don't want us [responding] in raid jackets; you want us there quietly."

ITAA President Harris Miller said it is "absolutely critical" that the private sector and the government work together, although he acknowledged that "the reality is that our interests are not always in alignment." However, the chances of battling e-crime and cyberterrorism without the government's help "are literally zero," he said.

– Dan Verton

Dell server consolidation.

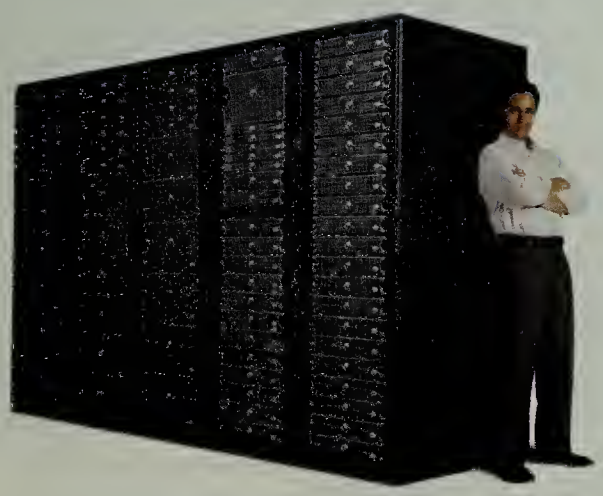
Saves money.
Saves space.

Spells doom for your old servers.

Dell | Enterprise

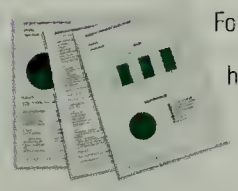
Consolidate with Dell and you'll need to find a new use for your old servers.

What kind of server consolidation solutions does Dell bring to your enterprise? Just what you'd expect: A legendary focus on you, the customer, that's as relentless as our focus on driving down costs. An end-to-end solution that saves you money today and tomorrow by delivering:



Dell PowerEdge™ Servers use Intel® Xeon® Processors

- **Maximum flexibility, manageability, value and price/performance.** Our new line of PowerEdge™ servers, powered by Intel® Xeon® processors, that consistently rank at the top of industry benchmarks such as TPC.* Collectively lowering TCO and accelerating time to ROI.
- **Optimized uptime/maximized investment.** Dell's new systems management solutions deploy software, tools and services which simplify and automate server systems administration. Leveraging your IT resources and maximizing your IT dollar.
- **Server consolidation services.** Our comprehensive portfolio includes consolidation readiness assessment, consolidation design and transformation, customer training and certification, deployment and high availability support services.
- **Flexible financing alternatives.** Dell gives you a variety of financing avenues designed to help you optimize ROI.



For nearly 20 years, we've revolutionized the way the world buys and manages technology. Now find out how Dell's direct approach can revolutionize your server consolidation. To learn more about the Dell ROI test, visit **www.dell.com/serverROI** or call us toll-free at **1-877-434-DELL.**

intel inside XEON

Flexible solutions that can cut costs today and tomorrow. Easy as DELL™

Call 1-877-434-DELL or visit www.dell.com/serverROI

*Per TPC-W 100,000 Item Count Results Test, June 2002. For more information, visit www.tpc.org. TPC and TPC-W are trademarks of the Transaction Processing Performance Council. Intel, the Intel logo and Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Dell, the Dell logo and PowerEdge are registered trademarks of the Dell Computer Corporation. ©2002 Dell Computer Corporation. All rights reserved.

Limping Nortel Eyes Corporate Networks

Tries to make up for slow sales of telecom gear

BY MATT HAMBLEN

NORTEL NETWORKS Ltd. last week unveiled a marketing strategy focused on mainstream corporate users, as the struggling vendor attempts to move beyond the still-dreary market for networking gear sold to telecommunications carriers.

As part of the move, Nortel also announced revisions to three IP telephony products, including a switch that provides electrical power over Ethernet to compliant devices such as IP phones and wireless access points.

Oscar Rodriguez, who was named president of Nortel's enterprise networks division Oct. 3, said in an interview that the Brampton, Ontario-based company's increased focus on corporate users began percolating a year ago. "The work you see wasn't done overnight," he said, adding that Nortel will emphasize integration of voice and data but won't force users to give up legacy networking systems.

Users and analysts welcomed the strategic move by Nortel, especially in light of the nearly 60,000 jobs the company has cut since early last year.

"It's clear to me that Nortel is here to stay, but it was painfully obvious 12 months ago that something was really broken," said John Haltom, network director at Erlanger Health System in Chattanooga, Tenn. Erlanger has bought about $2.5 million worth of Nortel equipment during the past year, including 450 network nodes and 500 IP telephones, he said.

Haltom said he "did a lot of homework" before picking Nortel as his lead networking supplier over Cisco Systems Inc. and Paris-based Alcatel. He said that last summer he noticed a marked difference in how sales and service teams from different Nortel divisions were working together and responding faster to his questions and requests. "If they follow anything close to the path of the last 12 months, they are going to still be a viable force to contend with," Haltom said.

Mark Fabbi, an analyst at Gartner Inc. in Stamford, Conn., said the corporate networking push is important for Nortel. "The service provider business Nortel once had is bad today," he said. "They had ignored the enterprise for a while, and there were even rumors a year ago that they'd get rid of the enterprise focus. But that's been put to bed."

Back to Break-Even

Nortel's overall technology is solid, Fabbi added. And while the company is struggling financially, it has "a pretty decent cash position" and should be able to use the increased corporate focus to get back to break-even performance by next year, he said.

Rodriguez said Nortel will emphasize several themes important to corporate users: security, regardless of the device; convergence of technologies such as voice, video and data; network management capabilities; built-in scalability; and support for fail-safe network operations.

An example of the new technology Nortel plans to offer is presence awareness, which is due to become generally available in the spring as part of the CSE MX, an IP-based private branch exchange switch. Based on a user's preferences, the switch will automatically move calls from landline phones to cell phones or take voice-mail messages and convert them to text e-mail, Rodriguez said. ◗

NEW PRODUCTS

New Gear

Networking devices Nortel announced last week include the following:

THE BAYSTACK 460, a switch providing integrated electrical power over Ethernet. Available in January, it starts at $3,495.

RELEASE 2.0 of its Succession Communication Server for Enterprise 1000, an IP-based private branch exchange device that can handle 1,000 users per server, an increase from 640 previously. Pricing starts at $625 per line.

CALLPILOT RELEASE 2.0, an upgraded unified messaging product that supports full Web access and adds new systems management and security features. Pricing ranges from $100 to $200 per client.

Lucent Stops Work on Telecom Switch

Lucent Technologies Inc. last week confirmed that it's shutting down development of its TMX 880 core network switch, which was being developed for use by telecommunications companies.

The TMX 880, announced last November, was based on Multiprotocol Label Switching (MPLS) technology. It had been in trials with prospective users and was being positioned as a follow-on device to Lucent's GX 550 Asynchronous Transfer Mode (ATM) switch.

Lucent spokesman Richard Muldoon said the discontinuation doesn't mean that the Murray Hill, N.J.-based company is abandoning MPLS technology. He noted that CEO Patricia Russo said last month that Lucent would continue to invest in MPLS and enhancements to the GX 550, as well as its CBX 500 edge switch and PSAX edge concentrator.

In the company's fourth-quarter earnings call Oct. 23, Russo talked of focusing on products that are part of "near and clear" market opportunities, said Muldoon. He called ATM a "living market" for Lucent, which has reported losses for 10 straight quarters.

Tom Nolle, an analyst at CIMI Corp. in Voorhees, N.J., said Lucent wasn't getting demand "at all" for the TMX 880 and was having problems meeting feature delivery requirements.

But contrary to the continued faith that the company is putting in the GX 550 and CBX 500, killing the TMX 880 "almost forces Lucent to sell off the remainder of the 500/550 product set," Nolle said.

– Matt Hamblen

Continued from page 1

J.P. Morgan

J.P. Morgan Chase said there was talk within the bank that a final decision could be made as early as this week. But a consultant who works closely with the company said a high-ranking IT official told him that a deal wouldn't happen so soon. Another source told *Computerworld* that any agreement probably wouldn't be made until year's end.

A spokesman for J.P. Morgan Chase declined to comment on the situation, as did officials from IBM and EDS.

The J.P. Morgan Chase spokesman also wouldn't disclose the company's annual IT budget or the size of its IT staff. Octavio Marenzi, managing director at Celent Communications LLC, a Cambridge, Mass.-based financial services and IT consulting firm, estimated that the bank's 2002 IT budget is about $4.7 billion.

Outsourcing isn't entirely new to J.P. Morgan Chase, which was formed in December 2000 through the merger of Chase Manhattan Corp. and J.P. Morgan & Co. In 1996, J.P. Morgan outsourced one-third of its global information systems and telecommunications operations to a group of four vendors in a seven-year, $2 billion agreement.

One of those vendors was Computer Sciences Corp. An IT consultant last week said El Segundo, Calif.-based CSC might play a tangential role in supporting either IBM or EDS if J.P. Morgan Chase does award one of them a contract.

The outsourcing deliberations come at a time when J.P. Morgan Chase's executives are under pressure because of recent financial results. The bank last month said its third-quarter earnings dropped from $1.1 billion last year to $325 million, excluding special items. The biggest problems occurred within its investment banking unit, which posted an operating loss of $256 million.

Marenzi said a large number of investment banks are considering outsourcing because of cost pressures. But banks often "don't know the costs of running their [IT] operations," which makes it harder to decide whether outsourcing would save money, he said.

In addition to their potential for lowering costs, outsourcing megadeals can provide "a short-term revenue bump" for customers who sell their IT equipment and facilities to the outsourcing vendor, said Larry Tabb, an analyst at TowerGroup in Needham, Mass. ◗

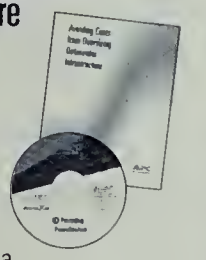
MORE ON OUTSOURCING

For full coverage of IT outsourcing deals and issues, head to our IT Management Knowledge Center:

QuickLink a2290
www.computerworld.com

FREE White paper!

Avoiding Costs from Oversizing Data Center Infrastructure



Just mail or fax this completed coupon or contact APC for your FREE white paper - **Avoiding Costs from Oversizing Data Center Infrastructure**. Better yet, order it today at the APC Web site! You will also receive a free PowerStruXure™ CD: "Presenting PowerStruXure".

http://promo.apc.com

Key Code h400y

(888) 289-APCC x2516 • FAX: (401) 788-2797

APC®
Legendary Reliability™

FREE White paper!

Avoiding Costs from Oversizing Data Center Infrastructure

Planning a data center is easy! Try our online configurator today!

☐ **YES!** Please send me my FREE white paper - and the FREE PowerStruXure™ CD: "Presenting PowerStruXure"!

☐ **NO,** I'm not interested at this time, but please add me to your mailing list.

Name: Title:

Company:

Address: Address 2:

City/Town: State: Zip: Country:

Phone: Fax: E-mail:

☐ ***Yes!*** ***Send me more information via e-mail and sign me up for APC PowerNews e-mail newsletter.*** **Key Code** h400y

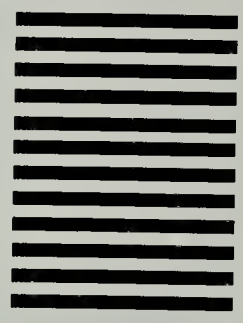
What type of availability solution do you need?
☐ UPS: 0-16kVA (Single-phase) ☐ UPS: 10-80kVA (3-phase AC) ☐ UPS: 80+ kVA (3-phase AC) ☐ DC Power
☐ Network Enclosures and Racks ☐ Precision Air Conditioning ☐ Monitoring and Management
☐ Cables/Wires ☐ Mobile Protection ☐ Surge Protection ☐ UPS Upgrade ☐ Don't know

Purchase timeframe? ☐ < 1 Month ☐ 1-3 Months ☐ 3-12 Months ☐ 1 Yr. Plus ☐ Don't know

You are (check 1): ☐ Home/Home Office ☐ Business (<1000 employees) ☐ Large Corp. (>1000 employees)
☐ Gov't, Education, Public Org. ☐ APC Sellers & Partners

©2002 APC All trademarks are the property of their owners. PSX3A2E8-USb_2c • E-mail esupport@apcc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON RI

POSTAGE WILL BE PAID BY ADDRESSEE

APC®

ATTENTION CRC: h400y
Department: B
132 FAIRGROUNDS ROAD
PO BOX 278
WEST KINGSTON RI 02892-9920

How to Contact APC

Call: (888) 289-APCC
use the extension on the reverse side

Fax: (401) 788-2797

Visit: *http://promo.apc.com*
use the key code on the reverse side

APC®
Legendary Reliability™

Why new PowerStruXure™?

Why save money, space and time in your data center?

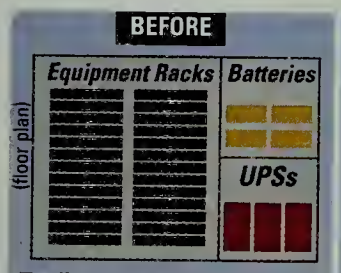
PowerStruXure™

You no longer need to design your data center using an outmoded approach.

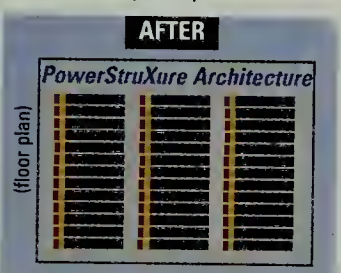
From 1kW to 5MW, APC PowerStruXure™ architecture provides a patent-pending, systematic approach to building data center infrastructure utilizing standardized, pre-assembled components.

Lower Costs
PowerStruXure's scalable, modular design lets you build out your capacity only as it's required, optimizing your CapEx.

The simplicity of design lowers OpEx and lessens your dependency on expensive service contracts.



Traditional data centers are built out for future capacity and require a large amount of floor space that could be otherwise utilized.



PowerStruXure lets you build out capacity only as it's required. Save up to 50% CapEx and 20% OpEx, and reclaim an average of 20% usable space.*

Reclaim space
PowerStruXure's rack-optimized design lets you reclaim an average 20% of useable space within your installation that was previously needed for infrastructure equipment.

Speed infrastructure deployment
PowerStruXure dramatically accelerates your deployment schedule with configure-to-order components and a pay-as-you-grow approach. Modular system components are easily replaceable, decreasing repair times.

Adapt to unexpected contingencies
With PowerStruXure, there's no need to abandon your previous investment – whether you need to physically move your data center or adapt to technology refreshes.

Vendor-neutral
Best of all, you will never be boxed in by proprietary solutions. PowerStruXure is compatible with all major server and internetworking platforms, including HP/Compaq, Dell, IBM, Sun, Cisco, Lucent, and Nortel, guaranteed.

HP/COMPAQ • SUN • IBM
GUARANTEED COMPATIBILITY
DELL • CISCO • LUCENT

*With **"Fits Like a Glove"** money back guarantee! See Web Site below for details.*

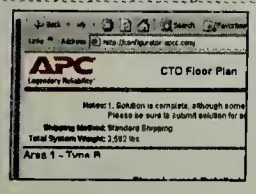
"I enjoy the fact that I can buy only what I need now and add to it later only when I need to."

Michael Touchstone
Manager of Energy Conservation,
Cox Communications

Winner of the Windows and .Net Magazine *"2002 Reader's Choice Award for Best High Availability Solution" and the GCN "Best New Technology Award" at FOSE, March 2002.*

APC®
Legendary Reliability™

**Representative savings based on projected power infrastructure build-out costs and estimated service cost per unit. Actual savings may vary*

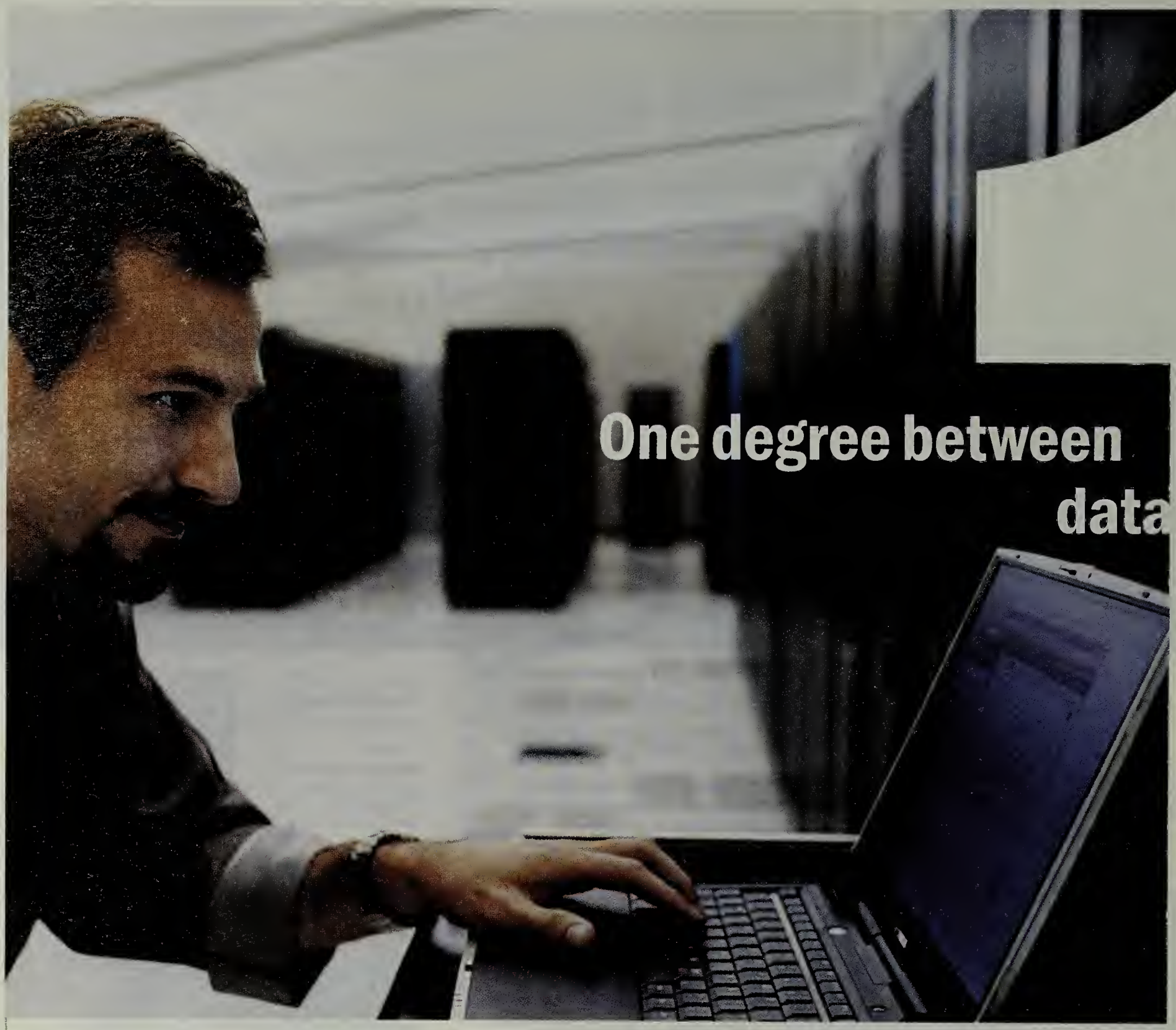


Planning a data center is easy! Try our online configurator today!

or download a FREE White Paper: "Avoiding Costs from Oversizing Data Center Infrastructure"

Visit http://promo.apc.com Key Code h400y • Call 888-289-APCC x2516 • Fax 401-788-2797

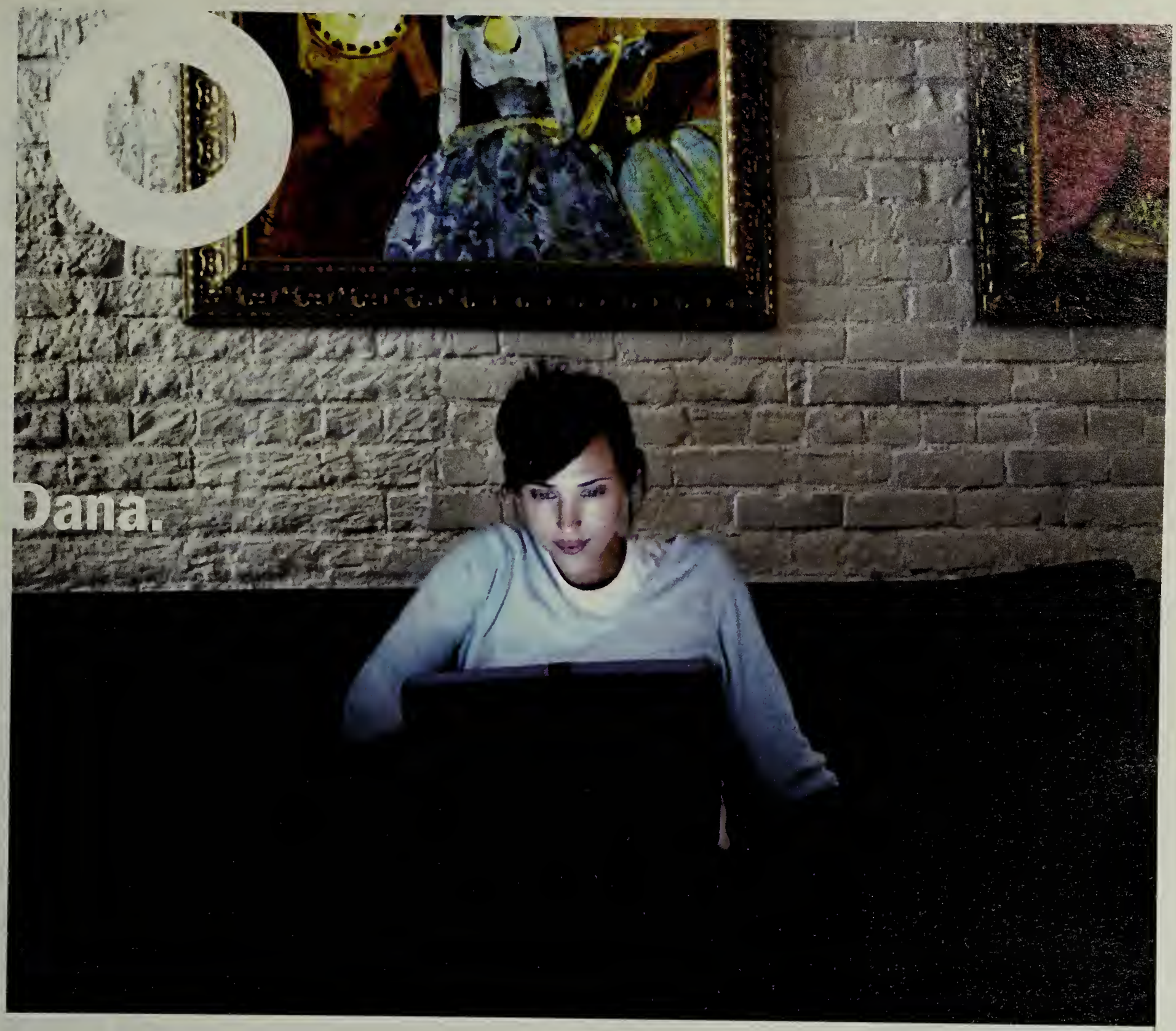
©2002 American Power Conversion Corporation. All Trademarks are the property of their owners • E-mail: esupport@apcc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA • PSX4B2EF-US



When software lets you use data to personalize customer connections, that's one degree of separation. The myriad of choices available to online consumers is staggering. The personal service available at traditional businesses is largely absent online and the pressure is on you to bring it back. Microsoft® solutions for Internet business provide the tools you need to build stronger relationships with your global network of customers and trading partners. Scalable user and content profiling allows you to target content and offer more personalized options including customer-specific catalogs with custom pricing and product information.

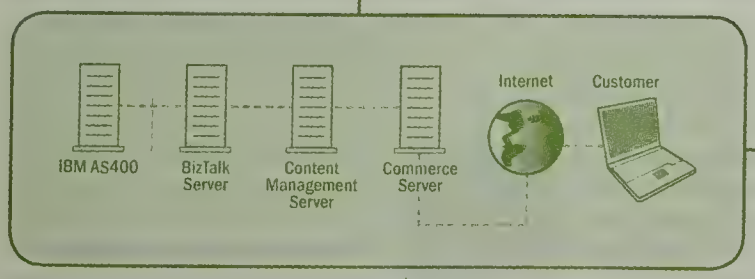
Now it's easier for you to aggregate profile data from multiple underlying data sources to leverage existing technology investments and enable richer profiling capabilities. And with built-in business analytics, you can analyze ever-changing user behavior to predict purchasing and browsing preferences, all while delivering real-time recommendations. Plus, through direct support for XML-based data, companies can exchange catalog and order information and integrate order fulfillment systems for seamless transactions. Find out how .NET connected software can help you connect with your customers better. Go to **microsoft.com/enterprise** Software for the Agile Business.

© 2002 Microsoft Corporation. All rights reserved. Microsoft and BizTalk are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.



and Dana.

The **Royal Canadian Mint** *wanted to reach its diverse worldwide customers, expand sales of its products, and deliver a highly customized consumer experience, so they used the Web content management capabilities of Microsoft Content Management Server integrated with the e-commerce, personalization and backend data integration capabilities of Microsoft Commerce and BizTalk® Servers. Now the Mint can publish content in multiple languages, draw on customer information from its legacy database, and feed online orders through an existing ERP system, enabling the Royal Canadian Mint to offer customers a richer and more personalized experience.*



Microsoft

SAP Plans Apps to Link Plants, Supply Chains

Software won't be ready for 18 to 24 months

BY MARC L. SONGINI

SAP AG last week highlighted a long-term plan to develop a set of manufacturing applications designed to let users bolt together their supply chain and shop-floor systems.

At a conference in Nashville for production and inventory control managers, SAP announced that it has set up a team of developers to focus on collaborative production and supply chain applications that will work together as one system. While sketchy on the details of the plan, SAP said the promised product suite will integrate operations ranging from raw materials procurement to the shipment of finished goods.

The envisioned result: improved inventory turns, shorter manufacturing cycle times, better quality management and a reduction in overall operating costs and working capital needs.

Bill Wohl, a spokesman for SAP America Inc. in Newtown Square, Pa., said it will probably take the company 18 to 24 months to deliver new or enhanced applications.

"It's less a factor of technological improvements than it is weaving supply chain management into the processes that make up manufacturing solutions," Wohl said. Shop-floor workers typically have tended to view what they do as different from the jobs of supply chain managers. "Now we're saying, 'Let's bring them together,' " he said.

A production manager at a North American maker of thermal analysis instruments that's part of a manufacturing group based in Europe said SAP's initiative is conceptually appealing — especially if it could help users cut faxing and other manual data-sharing processes out of the manufacturing cycle.

"I'm a small-shop operator, but we work for a big company," said the manager, who requested anonymity. His operation uses the materials management, accounting and sales order entry applications from SAP's R/3 enterprise resource planning (ERP) suite and has tied them into a central R/3 system in Europe. But it would be a big help to have applications that could send data to company headquarters when products are shipped to customers, he said.

David Dobrin, an analyst at B2B Analysts Inc. in Cambridge, Mass., said he's skeptical about SAP's ability to deliver on its integration promise. So far, no ERP vendor has successfully linked its manufacturing or back-office applications to shop-floor production systems in a meaningful way, according to Dobrin. Shop-floor machines "don't fit well with ERP systems," he said.

"This is a good first step but still does not make SAP competitive in most manufacturing industries at the shop-floor level," said Karen Peterson, an analyst at Gartner Inc. in Stamford, Conn. For users with basic data-integration needs, the plan should "enable a tighter coupling of the shop floor with the top floor," she added. ◗

More From SAP

The software vendor also made the following supply chain announcements:

NEW LOGISTICS EXECUTION CAPABILITIES supporting rail car management and customer freight invoicing have been added to its mySap Supply Chain Management applications.

MORE THAN 70 HIGH-TECH COMPANIES, including Hewlett-Packard Co. and Motorola Inc., are using the supply chain software.

Kapor Sets Up Group to Write Open-Source Software

Foundation will develop personal information manager applications

BY TODD R. WEISS

As a co-founder and CEO of Lotus Development Corp., which is now part of IBM, **Mitchell Kapor** helped make the PC useful for business applications by creating the Lotus 1-2-3 spreadsheet. In 1990 he helped form the Electronic Frontier Foundation, a nonprofit civil liberties group. Kapor, who turned 52 Friday, spoke with *Computerworld* last week about his latest project: building an open-source personal information manager (PIM) application.

How did this PIM project, code-named Chandler, come about, and why did you begin it? The idea in general is to create more and better opportunities for people, especially people who are less well served, like people on Macs or Linux, and also small to medium-size organizations. To get advanced collaboration features, whether you're using Microsoft Exchange or Lotus Notes, you need a big server. Big companies complain about how much it costs, and small companies can't afford it.

But why build an open-source PIM in a market dominated by Exchange, Notes and others? Innovation in the commercial space has really come to a standstill. Some of that is due to Microsoft's dominant position, which makes it foolish to try to raise venture capital to start a new company. The PIM has become in the Internet era, for many people, the single most important application that they use, because people spend huge amounts of time with their e-mail. I think there are lots of opportunities to make improvements.

Why did you create a nonprofit foundation, the Open Source Applications Foundation, as a base for this effort? I wanted to send a very clear signal that this is not a vehicle for personal economic ambition. Developers who contribute won't feel ripped off.

Critics might say you're doing this to jab Microsoft in the gut for personal satisfaction, because of its domination of the desktop software market. Are they onto something? I am on the record about being unhappy about Microsoft's behavior on a number of occasions. But that's not a sustaining motivation. The idea is not to take on Microsoft. If we're successful, there will be niche adoption of the product.

When will the PIM be available to users? Optimally, there will be a first release in the fourth quarter of 2003 or the beginning of 2004. We'll have things for developers to play with by the end of this year. ◗

States Push to Require Online Sales Tax Collection

Users wonder if systems will be able to handle the workload

BY PATRICK THIBODEAU

A push by revenue-hungry states to simplify the sales tax system and require all online sellers of goods to collect taxes is beginning in earnest. And it's causing retailers such as Wal-Mart Stores Inc. to fret about how the new tax-collection approaches would work.

Officials from states that are involved in the effort will meet next week in Chicago to ratify a proposed agreement on sales tax simplification plans. In order to win congressional approval for the mandatory collection of taxes on Internet sales, the group needs to make it easier for businesses to collect and remit the taxes.

Dave Bullington, a vice president at Bentonville, Ark.-based Wal-Mart, said the simplification effort is "extremely important" because retailers now face a daunting mix of tax rules from state to state. Companies are also subject to sudden rate changes that often leave them with little time to adjust their systems, he added.

But Wal-Mart and other interested users are unsure how well the new tax-collection processes will work in real-world applications. For example, O.C. Tanner Co., a Salt Lake City-based company that created the medals for the 2002 Winter Olympic Games, tested a remote transaction server as part of a technology pilot program for automating sales tax collections.

Tanner relied on a remote server operated by Taxware, a division of GovOne Solutions LP, to process sales taxes on a special Web site that sold merchandise related to the Olympics. Brad Lemke, lead developer in Tanner's e-commerce section, said the system worked well.

But because the pilot was limited to four states, Lemke said he's uncertain whether remote transaction servers could handle the much greater transaction load generated by Tanner's main retail systems.

"I would certainly have to be convinced that it would perform well," Lemke said.

Wal-Mart isn't likely to use a remote transaction server to automate its online sales tax processing.

"The last thing we need to do is overload the telecommunications industry with trying to tie duplicate numbers of telephone lines into every register for tax rate calculations," said Robert Jenner, director of sales and use tax compliance at Wal-Mart.

But the retail giant is interested in an alternative plan being crafted by the states. Under the plan, a company's in-house tax systems would be certified to be in compliance with sales tax rules if they met certain performance and accuracy levels.

Twenty to 30 states are expected to pursue online sales tax legislation. As soon as proponents get 10 states representing 20% of the U.S. population to simplify tax rules, they can seek congressional approval for mandatory sales tax collections, said Diane Hardt, a Wisconsin tax official and co-chairman of the Streamlined Sales Tax Project.

The states also plan to arrange a new technology pilot test, according to Hardt. Although there were three vendors in the first pilot, only Salem, Mass.-based Taxware, working with subcontractor Hewlett-Packard Co., got a system operating. ◗

Sales Tax Update

WHAT'S NEXT: States will meet Nov. 12 to finalize tax simplification agreement.

WHY IT'S NEEDED: A state can't force retailers to collect sales taxes unless the sellers have a physical presence in the state. By simplifying and automating tax collection, the states hope to persuade Congress to change that requirement.

TECHNOLOGY: Remote transaction servers are being developed. Vendors would assume tax collection obligations.

CERTIFICATION: Large businesses will likely seek in-house certifications that, ideally, would give them certain protections from audits if their systems meet certain standards. Vendors may also be able to sell software that does the same.

Microsoft to Limit Office 11 To Win 2k, XP

New version won't run on older OS releases

BY MATT BERGER

Microsoft Corp. last week said the next release of its Office software will work only on PCs that are running Windows XP or Windows 2000, the latter with the company's Service Pack 3 release of bug fixes and functionality updates.

A Microsoft spokeswoman said the software vendor could change its plans if it receives overwhelming feedback from users of older operating systems. But Microsoft cited security and compatibility issues related to the versions of Windows that predate Windows 2000 as the main reason for its decision.

The disclosure came a week after Microsoft started beta-testing the Office upgrade, which is code-named Office 11 [QuickLink 33820]. The company confirmed the planned operating system limits after BetaNews, a Web site devoted to information about products under development, reported that a Microsoft developer had posted information about the limits on a message board for Office 11 beta testers.

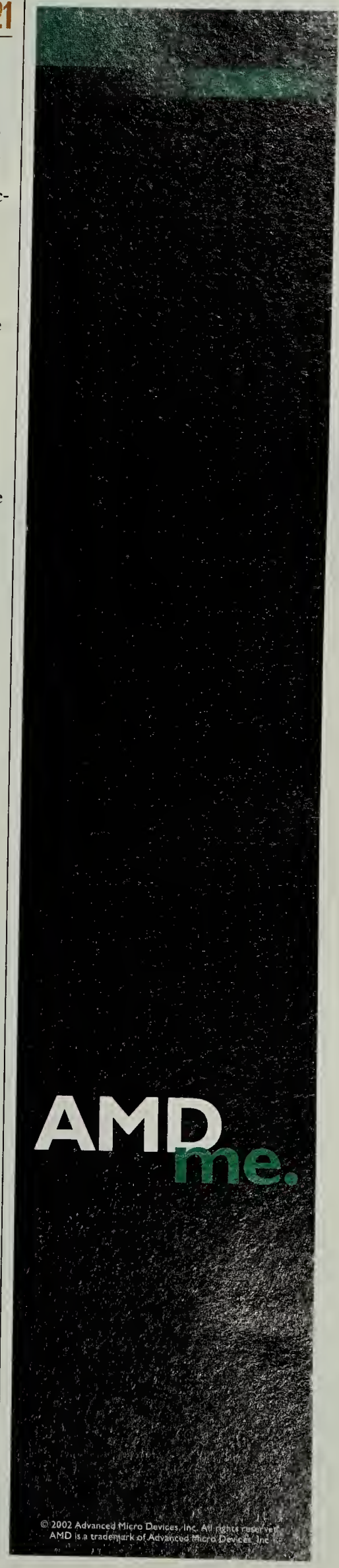
Paul DeGroot, an analyst at Directions on Microsoft Inc. in Kirkland, Wash., said new features that are expected to make it into Office 11 might require more advanced technology and security than what's available in older versions of Windows.

"To some extent, Microsoft may just be being fairly realistic about the market," he said. "They've got a product that might not run well on the typical Windows 98 machine."

But DeGroot added that Microsoft's decision also could be an effort to drive more users to upgrade to its most recent operating system releases. "Certainly, there's not a lot of incentive" for Microsoft to support backward compatibility, he said. "They want you to upgrade."

Microsoft limited the initial beta release of Office 11 to a few thousand users. The software is due to undergo wider testing early next year and is expected to be released for general shipment in mid-2003, with a variety of new features that take advantage of XML technology. ◗

Berger is a reporter for the IDG News Service.



Users Continue to Feel Pain on Navy's Intranet

Officials say problems stem from increased security, 'growing pains'

BY DAN VERTON

THE U.S. NAVY'S transition to a $6.9 billion outsourced intranet is still plagued with problems, according to a half-dozen Navy IT managers and a source inside Electronic Data Systems Corp., the project's prime contractor.

The sources said users of the Navy-Marine Corps Intranet (N/MCI) struggle with network slowdowns, failed e-mail messages, locked-down desktops that restrict application flexibility, and delays in fielding N/MCI-compatible workstations for science and technology workers.

The Navy and EDS acknowledged that there have been incidents of network slowdowns and lost e-mails. But they said those are rare cases that are often the result of new, stricter security requirements put in place as part of the contract.

"Many of the issues that have come up over Internet access and network speed have to do with vastly increased security protocols that N/MCI must adhere to," said Navy Capt. Chris Christopher, staff director of the N/MCI office. "As with any transition from an old to a new network, there will be growing pains."

Slow E-Mail, and More

Problems with N/MCI, which is being developed under a contract awarded to Plano, Texas-based EDS in October 2000, were reported last spring by some early users of the intranet. In interviews last month, sources said the glitches haven't been eliminated.

"Sending e-mail is no longer a sure thing," said a user in Yorktown, Va. "I now send all e-mails from both my N/MCI and legacy accounts to ensure everyone gets them." Like the other users contacted by *Computerworld*, the one in Yorktown requested anonymity.

A user on the West Coast said productivity has decreased dramatically since the switch to N/MCI because of slower network performance. Other users complained about new PCs that are missing plug-in software and other applications that are part of the N/MCI installation disk.

Meanwhile, frustration levels have increased as a result of what many consider to be overly restrictive software policies that dictate to local IT managers what software they can load on systems.

More than 400,000 desktop systems are due to be connected to the intranet when its rollout is completed in 2005. To date, more than 33,000 user PCs have been transitioned to N/MCI, and EDS has taken over control of 94,000 seats at 100 locations.

The vast majority of the initial seats were located "at the most complex Navy sites," which may explain some of the early glitches, said Kevin Clarke, a spokesman for EDS.

The Navy last month relaxed its Web content filtering policy for N/MCI users, said Clarke. Likewise, EDS made upgrades last month to address congestion at the security boundaries of N/MCI that has led to network slowdowns. Clarke said tests show that network performance is well within acceptable levels.

N/MCI BACKGROUND

To read previous *Computerworld* coverage of the N/MCI project, visit our Web site:

QuickLink 30073
www.computerworld.com

Trouble Timeline

JUNE 2000
The original contract award date is delayed by congressional concerns about the Navy's use of "operational funds" to pay for the contract.

OCTOBER 2000
After a second delay, EDS is awarded the N/MCI contract. But Congress expresses concern about the "unprecedented" scope and expense of the intranet project.

MAY 2002
60,000 pilot seats pass the first test and evaluation phase. However, internal EDS memos reveal delays and technical problems. One major Navy unit initiates a stop-deployment order, citing "inoperative functionalities."

OCTOBER 2002
Some users cite continued problems such as network slowdowns and lost e-mails. Navy and EDS officials point to increased security and expected start-up glitches.

Visa Eyes Voice Recognition for Online Purchases

Initial voice focus is on resetting worker passwords

BY LUCAS MEARIAN

Visa International Inc. is testing voiceprint authentication technology that eventually could be used by the company's member banks to let credit card holders speak into their PCs to verify online purchases.

Visa's initial usage is internally focused. About 200 employees at the Foster City, Calif.-based company last month began beta-testing software developed by Mountain View, Calif.-based Vocent Solutions Inc. for use in resetting their network passwords.

Visa officials said they expect Vocent's Voice Secure – Password Reset software to produce a speedy return on investment by reducing help desk calls. Visa plans to go live with the application early next year, widening its rollout to 5,000 workers worldwide.

But the company is also considering the idea of deploying companion Vocent software as a customer-facing application sometime next year. The software would create a digital representation of a consumer's voice and then match it against comments he was prompted to make when using a Visa card to process an online shopping order.

"It's not invasive, and it's very accurate," said Georgann Scally, vice president of alliance management at Visa. But even if Visa is confident that the voice-recognition service will work for consumers, it will be up to the banks that issue credit cards to decide whether to install the required servers and software, Scally said.

Visa is using two servers running Windows 2000 to perform the automated password resets as part of its internal testing. The first server runs Vocent's applications along with software that interfaces to Visa's private branch exchange telephone system.

The second server runs Courion Corp.'s Password-Courier software, which is integrated with Vocent-derived user and voiceprint data that's stored on the same box in a Microsoft SQL Server database. Vocent set up the links by using application programming interfaces developed by Framingham, Mass.-based Courion (see box).

Voice Test

- Vocent's **voice-recognition software** is installed on a Windows 2000 server.
- Another Windows 2000 system is running **software from Courion that builds a database of personal information** about Visa employees.
- **The Courion software connects with voiceprint data** stored in a SQL Server database on the same system.
- The software resets passwords after **confirming users' identities through voice recognition.**

Fewer Help Desk Calls

Visa averages 1,400 password resets per month, each one costing about $20 in help desk time, said Sam Rollins, vice president for information security at Visa. When the Vocent/Courion system is fully deployed, Visa expects to cut up to three quarters of those password reset calls, Rollins added. "It's more than just a savings in dollars," he said. "We're also talking about the time involved. It resolves [the] issue of getting hold of someone to reset the password."

Rollins wouldn't disclose the budget for the project, but he said the hardware costs and internal resource time added up to about $30,000. The test system took 60 to 90 days to roll out, he said.

Brad Adrian, an analyst at Gartner Inc. in Stamford, Conn., said voice-recognition technologies suffered during the 1990s from too much hype relative to their capabilities. But now the applications are accurate 90% to 95% of the time and "can pay for themselves very quickly," he said.

Rollins said Visa previously tried voice-recognition technology from another vendor, and it "just didn't work." But officials are happy with Vocent's software, he said.

Mobile solutions from AMD help to extend your notebook's battery life without sacrificing performance. Just because you're out of the office doesn't mean you've got less to do. That's why the mobile AMD Athlon™ XP processor includes exclusive PowerNow!™ technology. And why our AMD Alchemy™ Am1772™ wireless chipset is specially engineered to use less CPU power. The result is a more efficient laptop with desktop-like performance. It's just one more way AMD designs and builds mobile solutions with you in mind. We always have. We always will. To learn more visit www.amd.com

© 2002 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow

MARYFRAN JOHNSON

Utility Computing Buzz

THERE'S AN OLD newsroom joke that once you've spotted three of something, you've got a trend. So when IBM CEO Sam Palmisano sketched out Big Blue's big vision of "autonomic" computing last week, it was official:

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

IBM, Sun and HP have joined the trendy utility-computing club. This latest fashion in self-healing, self-managing IT environments also answers to buzzwords like grid computing, network resource provisioning and data center virtualization.

Later this month, HP will roll out its Utility Data Center architecture, which will bulk up its OpenView management software products with more network-mapping capabilities and a ream of service offerings from partners. Sun recently unveiled its N1 data center virtualization plans, aiming to automate computing administration tasks by pooling resources such as servers, storage and networking gear.

Fundamentally, the trio is trying to sort out the tangled complexities of managing the distributed computing environments they each had a share in creating in the first place. In calling its approach autonomic computing, IBM has repurposed a medical term coined in 1898 and usually associated with involuntary activities of the nervous system. Interesting marketing challenges lie ahead on that one, I suspect.

But the much bigger challenge will be in convincing senior IT managers and CIOs to buy into this futuristic vision that — taken to its utility metaphor extremes — could make their jobs irrelevant. I saw this realization hit home last week at a CIO gathering in New York, where Palmisano's pronouncements caught everyone's attention. One CIO from a Fortune 10 company summed up the threat that utility computing poses by pointing out that once computing services can be delivered like electricity via an outlet in the wall, "we're all out of a job."

Do you know any chief electricity officers? Me neither.

Now, I'm sure it's just a wild coincidence that this shared vision of utility computing would enable the Big Three to sell you massive amounts of software and services. IBM, Sun and HP executives don't talk about pricing or licensing costs when they're busy being visionaries, of course.

But they've done their math, and they've calculated a bleak bottom line, since they can't count on hardware sales to roar back. IBM, for example, expects the share of its profits that hardware sales account for to sink from 58% in 2000 to 42% by 2005. Software and services, however, are expected to rise briskly, from 29% of profits in 2000 to 41% in 2005. Trends in IT spending over the past decade confirm that software and services are rising while hardware is dropping.

IBM, Sun and HP executives are also making the usual vague claims of how businesses will "save money and gain competitive advantage" through utility service computing models, although there's not a shred of proof in sight. The search for fellow business users of grid computing is like the search for extraterrestrials — intellectually engaging but a bit lonely. Yet grid computing, in which distributed networks of data centers can be virtualized to work as one, does hold great promise.

The appeal of reducing complexity and better utilizing overbuilt infrastructures will drive corporate interest in innovations such as grid computing and shared utility services. But IT will need to watch the standards side of these product rollouts vigilantly, because making it all work together will call for unprecedented levels of integration. And no vendor knows your business the way you do.

In the meantime, keep your road maps handy, and kick the tires hard on this one.

PIMM FOX

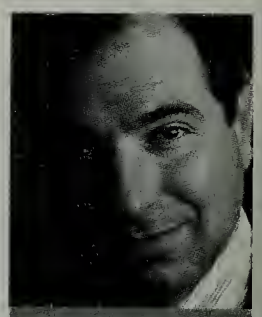
Use Those Vendor Freebies

THE BEST things in life are seldom free. However, if you happen to be a developer, there are a lot of good things that are free.

The open-source programming world is replete with examples. Perl, Tcl, MySQL and, of course, Linux are all there for the taking.

There are even more tools from mainstream vendors hoping to appeal to developers' desire for low-risk experimentalism, but their cold-eyed commercialism is still aimed at aiding their products' ultimate releases.

IBM is one of the more obvious examples of vendors throwing their commercial products at developers and exacting no monetary cost. But there's still a price to pay.



PIMM FOX is a freelance writer in San Francisco. Contact him at pimmfox@pacbell.net.

IBM's AlphaWorks (*www.alphaworks.ibm.com*) blends a corporate developer's parsimoniousness with a vendor's need for financial reward. For example, at AlphaWorks, registered users can access technology free for 90 days prior to its commercial release. This gives developers a chance to evaluate new tools, provide feedback and explore emerging standards.

A new Web services developer language for J2EE applications, WSDL Explorer, is currently available at AlphaWorks from IBM's emerging technology group. It's designed to help developers save time when comparing and contrasting Web services, since they don't have to import the information into another development tool. With this freebie, it's possible for programmers to work in a new WSDL environment without laying out any cash.

If the developer feedback to IBM is positive and the tool proves useful, it may be incorporated into a new or existing commercial release that benefits all budding Web services programmers. Of course, IBM reaps the advantage of having its products battle-

tested, critiqued and improved by a small army of unpaid professionals. It's like the open-source community, except IBM ultimately cashes checks for the software. IBM's WebSphere application server already contains 12 technologies from the developer-proven AlphaWorks site, including a WebSphere servlet engine and an XML parser for Java.

It's clear to me that IBM is profiting from quality-assurance work done for free by others. But that hasn't dissuaded AlphaWorks users, who tend to work at small to midsize businesses that don't have extra money to toss around — and probably don't have developers on call — from using the prerelease software.

Larger IT operations might want to get involved as well. Using these almost-free resources from vendors can save you money, but more important, your IT needs are more likely to be specifically addressed in upcoming product releases.

Getting something on the cheap is always nice, but getting something that's done right is far better. ◗

MICHAEL GARTENBERG

Turn Users Into Fans

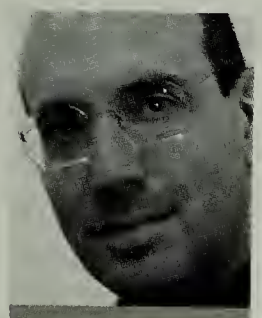
OK, THE ECONOMY is down. Budgets have been slashed, and we are all being asked to do more with less.

The good news is that IT is no longer something that can assist business; it's now something that in many cases defines business and isn't easily displaced.

The bad news is that despite this criticality, in many cases IT feels the pain of cutbacks first.

So, how do you survive the downturn until the real recovery comes? Well, the first thing to remember is that IT is first and foremost a service industry with a net sum gain of zero. If you're working at 100% efficiency, no one knows you exist, because everything is running quite smoothly. If you do get noticed, it's often by everyone in the company, and it's usually not to praise your efforts. It's typically because no one is able to get their e-mail or log onto a file server.

The goal of every IT manager ultimately is to stay off the obituary page and once in a while get in the headlines for a big, successful project rollout. So here are some ideas on how to keep yourself off the back page and every so often get yourself on the cover — in a good way:



MICHAEL GARTENBERG is research director at the Client Access and Technologies Group of Jupiter Research in New York. Contact him at **michael.gartenberg@mindspring.com.**

First, never forget your customer. That's right, those annoying, clueless users are your customers. Your goal is to transition them from cranky customers to adoring fans. And the only way to turn them into fans is to understand their requests and needs. Doing that is actually pretty easy, if you remember that each request — no matter what it is or who it's from — revolves around only one of two possible questions on their minds: "How do I keep my job?" or "How do I get promoted?"

This is where you come in. Providing the best possible level of support is the first step to getting the attention and focus well-run IT organizations deserve.

Second, learn to be proactive, not reactive. Many of the problems associated with the IT universe are related to the fact that most IT departments know how to react but are often never ahead of the curve.

Do you have lots of users who travel? Find ways to lighten their loads with thin and light notebooks. Do you have e-mail-addicted execs? Get them connected wirelessly. Are you already doing that? Add wireless calendar synchronization. Find ways to help your users do their jobs a little faster, a little easier and a little more accurately. Make them look good to the people they work for, and you will have fans for life.

Third, show them the money. There are two areas where you can win here: ROI and TCO. Figure out what the costs associated with a project really are, and then use those numbers to either show how you will save costs as a result of implementation or how you will help the company make money. If you can't show how you're saving or making money, then perhaps it's time to rethink the project.

Finally, remember that your users are facing the same issues you are. Help them in their time of need, and they will stand by you in times of fiscal cutbacks. ◗

WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site:
www.computerworld.com/columns

READERS' LETTERS

Phones for Victims

IT PROFESSIONALS are often charged with the task of disposing of old wireless equipment. Verizon Wireless' HopeLine program collects used wireless phones and equipment and refurbishes, recycles and/or sells them to benefit victims of domestic violence. Proceeds from HopeLine are used to place phones in the hands of victims, creating a lifeline in emergencies. Since 1995, HopeLine has collected more than 500,000 phones. But with more than 134 million people in the U.S. using wireless phones, we should be able to collect that number in one year.

With this program, old equipment can potentially assist victims, at little cost and effort. Additionally, participating in this program sends the message that your company supports two important issues: domestic violence awareness and prevention, and recycling.

Now it's time for IT professionals to make a commitment to get involved in HopeLine: Alert the office manager; send a companywide e-mail; put a collection box in the cafeteria or break room. Collect last year's phones and send them directly to HopeLine, or encourage employees to bring their old phones into any Verizon Wireless Communications Store. As employees consider swapping out their old equipment, encouraging them to participate in HopeLine may save a life.

For more information, visit *www.verizonwireless.com/hopeline.*

Denny Strigl
President and CEO, Verizon Wireless, Bedminster, N.J.

The Need for Cobol

IT'S FUNNY that Frank Hayes says in "Paradigm Lost?" [QuickLink 32810] that "Cobol lost its place to SAP and PeopleSoft," especially when one considers that the majority of the batch processing in PeopleSoft is written in Cobol. PeopleSoft claims that it's going to work toward removing the Cobol code in future releases, but for now, if you want to install the latest release of PeopleSoft, you must first purchase a $12,000 Cobol compiler.

Edward Hiney
Consultant, Naugatuck, Conn., e_hiney@yahoo.com

Making Sense of Telecom's Troubles

MOST OF WHAT WAS SAID in the article "FCC Investigates Ways to Help Telecom Sector" [QuickLink 33528] about what contributed to the downfall of the telecommunications industry is true, but the FCC itself was the biggest problem. After Congress passed the Telecommunications Act of 1996, the FCC didn't enforce it. The incumbents litigated the entrants to death. The incumbents were able to sell long-distance service but didn't open their markets to competition and didn't start to compete among themselves in their various markets. The FCC let them buy each other up and merge. This is an economic war that the new guys didn't expect to have to fight while they were trying to build infrastructure.

Andrew Weitzberg
Sales, Metcom Inc., Plainview, N.Y., aw@metcom.com

THAT WAS an interesting article on the FCC. Being a supplier to the telecom market, let me share my twist on this. I believe what's at play is good-old market capitalism. I believe the seeds of the telecom debacle were sown at the inception of telecom deregulation, although it probably was very difficult for all but a few to see that back then. In addition to all the good things deregulation could bring about, it opened the door for unintended consequences, such as a gold rush mentality. Everyone staked a claim, and when the mines played out, they folded their tents. That's market capitalism at work. But there are some aspects of a nation's infrastructure that should be somewhat insulated from the rises and falls of the free market, if for no other reason than to maintain strength. I think it's possible to have some degree of regulation alongside the free market.

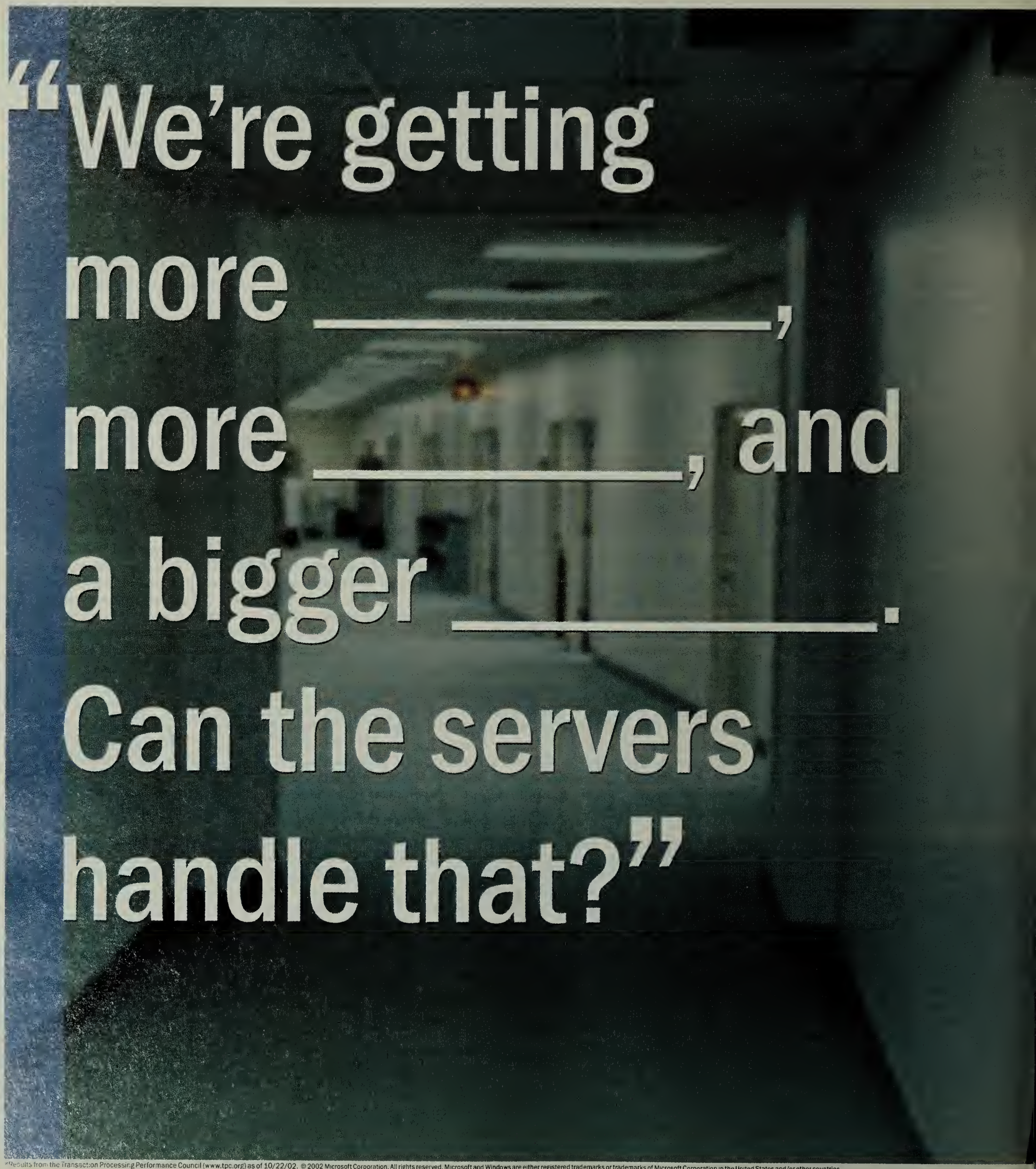
Les Harrison
Director, quality and education; Newton Instrument Co.; Butner, N.C.; mugdock@earthlink.net

YALE PROFESSOR Barry Nalebuff said "there simply aren't any good killer applications" that would sell broadband. Maybe it's not a killer app, but I bought DSL for the speed and the ability to conduct voice calls over a single line. The only problem I see is that DSL's price point of $50 is too high; it should be $30. Now that would be a killer.

Paul Bond
Erie, Pa.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

More letters on these and other topics are on our Web site:
computerworld.com/letters



*Results from the Transaction Processing Performance Council (www.tpc.org) as of 10/22/02. © 2002 Microsoft Corporation. All rights reserved. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

Anything can happen to your infrastructure. Make sure it scales. In today's unpredictable business world, where _____ can happen at any moment, you need the ability to increase or decrease computing capacity quickly and efficiently. Here's how the Microsoft® platform can help you get there:

World-record performance: The Windows® Server family holds world performance records in the TPC-C (transactions per minute) and TPC-W (Web interactions processed per second) benchmarks. In TPC-C price-performance benchmarks of clustered solutions, systems running software from Microsoft hold the top four results. In tests of non-clustered systems on TPC-C, Microsoft solutions hold the top ten spots in price-performance.*

Scale up, scale out, or both: Whether you're looking to consolidate your workload onto fewer servers "scaling up," or distribute the workload among many servers "scaling out," the Microsoft platform is ready. In a scale-up environment, the platform can support up to 32 processors and 32 GB of memory, while in a scale-out environment, the platform supports up to 32 servers via network load balancing.

For a Server Consolidation Kit, webcasts, and other information that can help you get your infrastructure scalable enough for _____, visit **microsoft.com/enterprise/scalability**

Software for the Agile Business.

*"**JetBlue** is using the Microsoft Server Platform to enable hardware consolidation, achieve better price-performance, decrease IT support costs, and reduce application development time. The scalability of our Microsoft-based infrastructure gives us the confidence that we are ready to handle today's usage spikes as well as future growth."*

—Jeff Cohen, Vice President & CIO, JetBlue Airways

Microsoft®

RELIABLE* ALTERNATIVE TO OBJECT-DISORIENTED DATABASES.

For your next generation of applications, move to the next generation of database technology. Caché is the *post-relational* database that combines high-performance SQL for faster queries and an advanced object database for rapidly storing and accessing objects.

With Caché's multidimensional engine, your future applications will be massively scalable and lightning fast – and they won't require frequent database administration or hardware and middleware upgrades. You'll get higher performance, at lower cost.

Plus, Caché comes with a powerful Web application development environment that will dramatically cut the time required to build and modify your applications.

The reliability of Caché has been proven in "life-or-death" applications at the world's largest hospitals. With high reliability, high performance and low cost-of-ownership, you'll be happier with Caché.

With its unique fusion of advanced objects and robust SQL, Oracle developers will be happier with Caché.

We are InterSystems – a specialist in data management for 24 years, providing 24x7 support to 4 million users in 88 countries.

Caché is available for Windows, OpenVMS, Linux and major Unix systems.

InterSystems
CACHÉ™
Make Applications Faster

*So Reliable, It's The World's Leading Database In Healthcare

Download a fully-functional version of Caché or request it on CD for free at **www.InterSystems.com/reliable**

© 2002 InterSystems Corporation. All rights reserved. InterSystems Caché is a registered trademark of InterSystems Corporation. Other product names are trademarks of their respective vendors. Rel3-All4

FIELD REPORT: Unified Messaging
Centralized access to faxes, voice mail and e-mail creates efficiencies, but unified messaging systems also require substantial infrastructure changes. **Page 32**

SECURITY JOURNAL: Experts Stumble on PKI Project
Vince Tuesday's attempt to rework his company's public-key infrastructure project demonstrates that even high-priced hired guns should be carefully evaluated. **Page 38**

QUICKSTUDY: Scale-Free Networks
These networks are different from random networks in that some of their nodes are very connected hubs, which changes the way the network operates, decays and responds when attacked. **Page 36**

A VIEW TO SAVINGS

Manufacturers are finding that increased visibility across their operations through data integration cuts costs. By Jaikumar Vijayan

WHEN RPM INTERNATIONAL INC. was looking for a way to streamline its purchasing processes, the multibillion-dollar manufacturer of speciality chemical products decided that the best approach would be to consolidate requirements from across all of its operations.

RPM, which owns brands such as Rust-Oleum, DAP and Zinsser, buys complex raw materials that go into the formulation of recipe-based coating, sealant and paint products. By collapsing requirements from across all of its brands, RPM reduced its list of standard ingredients, consolidated suppliers and created a new workflow for the purchasing process.

"We purchase $900 million a year in raw materials," says Paul Hoogenboom, CIO at Medina, Ohio-based RPM. "The ROI from having a consolidated view of this process is pretty darn obvious."

An increasing number of manufacturing companies are looking to improve efficiencies and trim costs by building more visibility into various levels of their operations, says Andy Chatha, president of ARC Advisory Group Inc., a Dedham, Mass.-based manufacturing consultancy.

"The change in the economy and the decline in demand has highlighted the overweight cost structures a lot of companies have," says Lou Unkeless, a vice president at Datasweep Inc. in San Jose.

As a result, companies are trying to "gather, aggregate, retain and analyze" data trapped at various levels of the organization, Unkeless says.

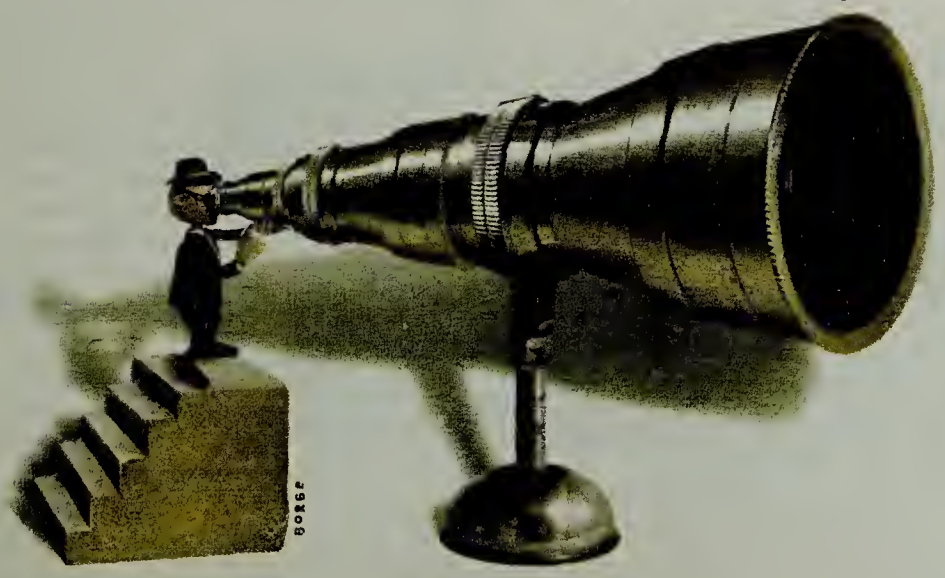
It helps them get a better understanding of "all the incoming logistics and outgoing logistics, right up to the customer's door," Chatha adds.

In RPM's case, to consolidate demand, the company had to first find a way to look at the chemical properties, specifications and test attributes of the various raw materials required by its business units to find out if multiple units used the same products.

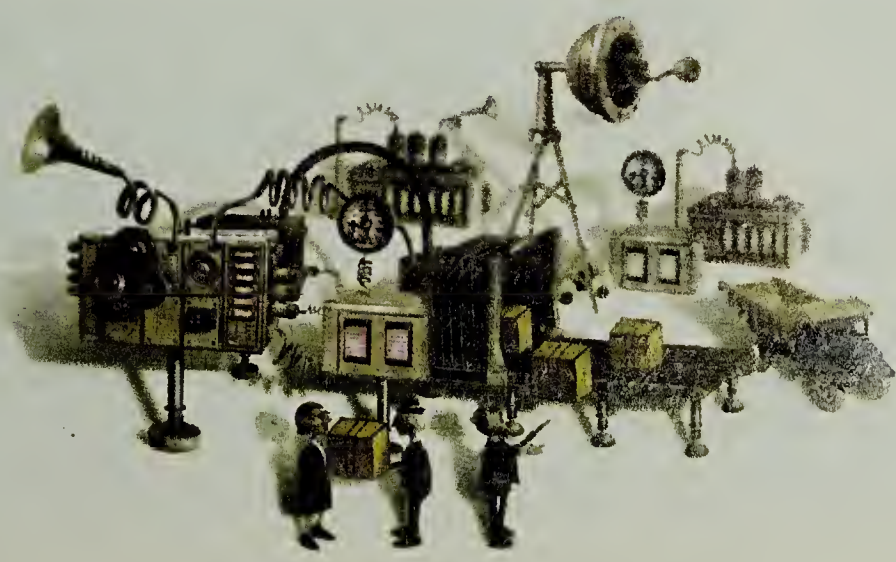
RPM implemented a specialized content management suite called Optiva from Formation Systems Inc. in Southboro, Mass., to create a product information backbone for capturing and sharing product knowledge, formulation attributes and purchasing histories.

Optiva is specialized for makers of recipe-based goods such as paints or processed food and has allowed RPM to have a much better visibility of its product requirements, Hoogenboom says.

"It's the mother of all consolidated systems, so it



RICHARD BORGE



can provide a single cross-referenced look at everything we buy," Hoogenboom says.

Other companies are also implementing data integration applications in order to achieve similar goals.

For instance, greater visibility across manufacturing operations can result in better quality and business processes, says Chuck Word, corporate quality control manager at Flash Electronics Inc., a Fremont, Calif.-based contract manufacturer of electronic components. Since June, the company has been pulling real-time quality information off the plant floor using Web-based monitoring and tracking software from Datasweep. Previously, "we had no reliable way to report quality data to customers," Word says.

Datasweep's Advantage software allows Flash to collect, integrate and analyze production data at every critical step, says Word. The software has also let the company implement what it calls a line-stop process to ensure that every manufactured component passes every quality step before it's shipped to customers.

Access to Detailed Information

Such data integration between the plant floor and the quality control and shipping departments has allowed Flash to give its customers detailed online access to quality reports, product genealogy and tracking information, Word says. It has also helped the company pinpoint and fix quality problems more quickly.

"The ROI has been very high," Word says.

Going forward, the company plans to "back-flush" the data it's gathering from the plant floor into its main enterprise resource planning (ERP) system, he says. That would give the company's purchasers and suppliers real-time information related to its raw materials needs.

Henkel Consumer Adhesives Inc. in Avon, Ohio, is able to better manage its customer relationships thanks to greater visibility of its point-of-sale data and of internal processes such as accounts receivable, shipment delivery dates and warehouse staff productivity levels.

MANUFACTURERS LOOK INWARD

In a tough economy, manufacturing companies are increasingly looking inside their operations for opportunities to cut costs instead of focusing on building better links with suppliers and external partners, as they once did, analysts say.

"Right now, most manufacturing companies have a big focus on lowering costs," says Andy Chatha, president of ARC Advisory Group. This has resulted in a greater scrutiny of internal inefficiencies and a focus on building "operational excellence," Chatha says.

Manufacturing companies have been very good at optimizing individual pieces of their organizations, such as plant floor operations or inventory management, but they've been relatively slow to integrate them, Chatha says. Consequently, the goal is to foster a more "collaborative culture" across an organization, he says.

Expect to see projects that are directed at building a more real-time and cross-functional view of internal operations, says Lou Unkeless, a vice president at Datasweep. "There's been somewhat of a retrenching in that companies are starting to look more at their operations first and only then looking at collaboration and information sharing" with external entities, he says.

– Jaikumar Vijayan

Henkel makes Duck brand adhesive products and distributes them to retailers like Wal-Mart, Target and Staples. In an effort to provide more value to its customers, the company decided to give retailers detailed analysis of their sales of Duck products, including projected demand patterns, says Matthew Rhoades, team leader of Henkel's advanced technology development effort.

Last March, Henkel implemented a data integration software tool called DataStage from Ascential Software Corp. in Westboro, Mass. Ascential's tool extracts, cleanses and analyzes point-of-sale, inventory, shipment and marketing data daily from Henkel's main ERP systems. The data is then used to generate detailed analysis for customers. It's also used to populate several data warehouses that Henkel's finance, marketing, sales and operations management teams utilize to perform at least 50 different types of analysis.

"We have an almost 360-degree view of sales, inventory, manufacturing, shipment and consumption information," Rhoades says. "It has completely changed the way we do manufacturing." Instead of manufacturing to meet forecast levels, the company now manufactures to meet actual demand.

Improving Collaboration

In much the same way, a cross-functional view of design and engineering processes is helping Fort Worth, Texas-based Lockheed Martin Aeronautics Co. in a massive collaborative manufacturing effort involving three major manufacturing partners and more than 80 major suppliers in three countries.

Lockheed is using Catia Metaphase Interface (CMI) software from Lisle, Ill.-based T-Systems Inc. in the design and engineering of the Joint Strike Fighter (JSF) aircraft, which it's developing for the U.S. armed forces. CMI allows Lockheed to visually represent alphanumeric product data in a 3-D graphical format. With CMI, Lockheed can take assembly and subassembly design information related to the 25,000 parts contained in the JSF and render it in 3-D form using Catia computer-aided design software from Dassault Systemes SA in Suresnes, France.

"Effective communication is one of the biggest challenges in a project of this scope," says Larry Mestad, a senior manager of the JSF integration team.

With CIM, "we are able to provide product information both visually and textually to all of our partners and supply base," he says.

It's not always necessary to rip out existing systems to build better visibility, says Bill Fisher, CIO at snowmobile maker Polaris Industries Inc. in Minneapolis. Faced with the challenge of integrating multiple data sources about three years ago, Fisher decided that the best course of action was to build on the investment Polaris had already made in ERP software from Mapics Inc. in Alpharetta, Ga.

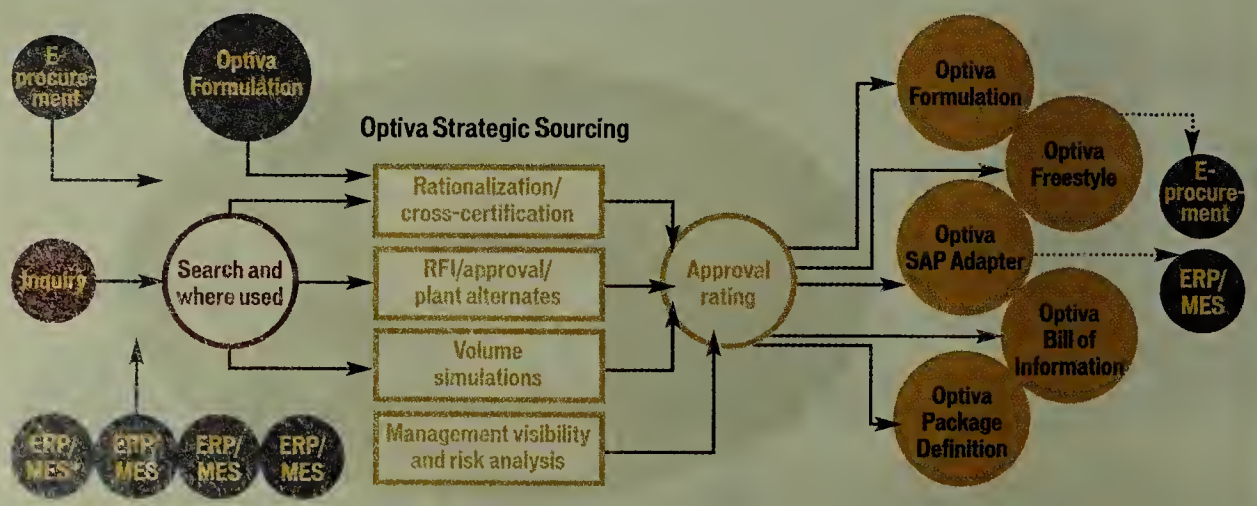
Instead of spending about $20 million on a new ERP installation — which was what a team of consultants recommended — Fisher and his team decided to use Microsoft Corp. extranet and intranet technology to connect various Mapics modules, such as procurement, inventory management and resource planning.

During the past two years, the "integration over time" approach has resulted in a connected enterprise where information flows far more efficiently than before, Fisher says. Polaris' new extranet for its 2,000 dealers has eliminated costs related to the use of electronic data interchange technology, cut out paperwork associated with purchase orders and warranty claims, and made it far easier for the company and its dealers to schedule, track and manage orders.

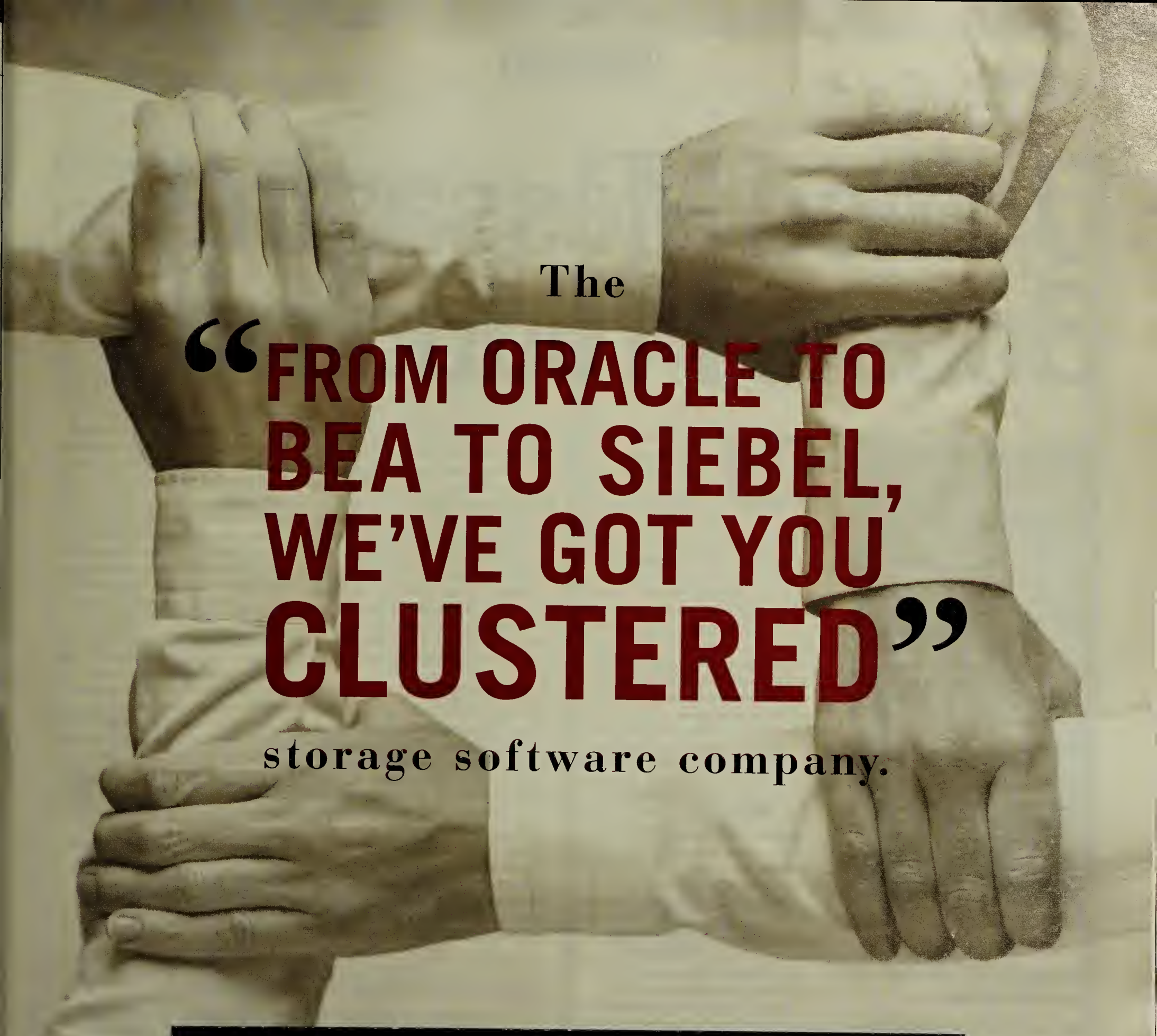
"For a lot of people, the easy answer is to throw away everything they have in place" to get new functionality, Fisher says. "Its just not obvious to me that it is always the best approach." ◗

HOW RPM INTERNATIONAL USES OPTIVA STRATEGIC SOURCING

Formation Systems' Optiva Strategic Sourcing application gives RPM a single view of raw materials used across the extended organization. The information allows purchasing groups to capture companywide requirements, compare vendor data against quality specifications, identify low-cost substitutions and control the proliferation of new materials.



* Manufacturing Execution Systems



According to a recent IDC report on the clustering and availability software market, VERITAS Software was both the fastest growing company in the segment and the revenue leader in 2001.

veritas.com/clustering

VERITAS™

Copyright ©2002 VERITAS Software Corporation. All rights reserved. VERITAS Software and the VERITAS Software logo are trademarks or registered trademarks of VERITAS Software Corporation. All other trademarks are the property of their respective owners.

Unified Messaging Boosts Productivity

Unified Messaging

A few years ago, it was widely predicted that unified messaging (UM) systems would revolutionize the way people worked by aggregating corporate e-mail, voice mail and fax traffic. That revolution never happened. The problem: UM's upfront costs and incremental productivity benefits made the business case difficult to justify.

Since then, UM has made inroads as a way to support mobile workers. But as IT replaces outdated voice-mail systems, many companies are taking a second look at adding UM capabilities for internal workers as well.

By Drew Robb

FIELD REPORT

TECH CHECK

Convenience, not necessity, may well be the true mother of invention. Witness the ubiquitous microwave or TV remote. Likewise, though it's been hard to demonstrate a clear-cut need for unified messaging (UM), it sure is convenient.

Why check the computer for e-mail, dial the phone for voice mail and stroll over to the fax machine when you can get all three in your e-mail in-box or by making a single phone call? And newer unified communications products include greater integration and advanced features.

But those benefits come only after IT has jumped over installation and training hurdles. Installing UM usually requires replacing existing communications hardware and software, or adding middleware. Then there's training employees. Given a price of about $200 per seat, including deployment, training and management costs, UM can be a tough sell in a tight economy.

Nevertheless, UM can make sense for certain employees. "UM is good for a mobile workforce and geographically dispersed workgroups," says Blair Pleasant, an analyst at The Pelorus Group in Raritan, N.J.

A case in point: State Compensation Insurance Fund in San Francisco is using Basking Ridge, N.J.-based Avaya Inc.'s Unified Communication Center so mobile employees can access the network faster. But while State Fund is deploying UM at all its offices, the company limits access to mobile employees because it's neither necessary nor cost-effective to provide the technology to the entire staff, according to Bryan Townsend, the company's telecommunications manager.

William L. Lyon & Associates Inc. is taking a different approach. The Sacramento, Calif.-based real estate firm is rolling out UM only to new offices or to those upgrading their private branch exchange systems. "Our goal initially was to find an alternative to our Avaya Octel voice-mail system, with its proprietary hardware," says Lynn Ryan, IT director.

While the new CallXpress software from Captaris Inc. in Kirkland, Wash., is easier to manage, she says it won't be deployed companywide anytime soon. "We have 12 Octel units in offices, and it would be prohibitive to swap out all the equipment," she says. As the Octel systems reach end of life, she plans to replace them with CallXpress.

Easier Integration

Most UM software is designed to work with e-mail systems like Microsoft Corp.'s Exchange, IBM's Lotus Notes or Novell Inc.'s GroupWise. Some come with voice-mail and fax features, while others act as middleware to unite data from third-party products.

These days, integration isn't as challenging as it was a few years back. Glenn Harley, telecommunications systems department lead at Eglin Air Force Base in Fort Walton Beach, Fla., says he installed and tested the latest version of Seattle-based Active Voice LLC's Repartee in about two hours.

But installing UM is only half the battle. It takes work to get people to abandon their old communication habits. Townsend says that few employees use the desktop fax feature.

Ryan encountered similar problems. "You would think UM would be perfect for real estate agents," she says. But "it takes a lot of training and promotion to get them to use all the features," she notes.

Once employees begin using UM, however, it quickly becomes a must-have technology. "Having e-mail/voice mail on the PC is an incredible timesaver that makes running an office more efficient," says Robert Kaplan, senior project manager at the U.S. Air Force Research Laboratory in Rome, N.Y. Kaplan deployed CallPilot from Brampton, Ontario-based Nortel Networks Ltd. "[The users] didn't want to change at first," he says.

But training helped turn the tide. "You can't take it away from them now," Kaplan says.

Robb is a freelance writer in Tujunga, Calif.

Definition: Unified Messaging vs. Unified Communications

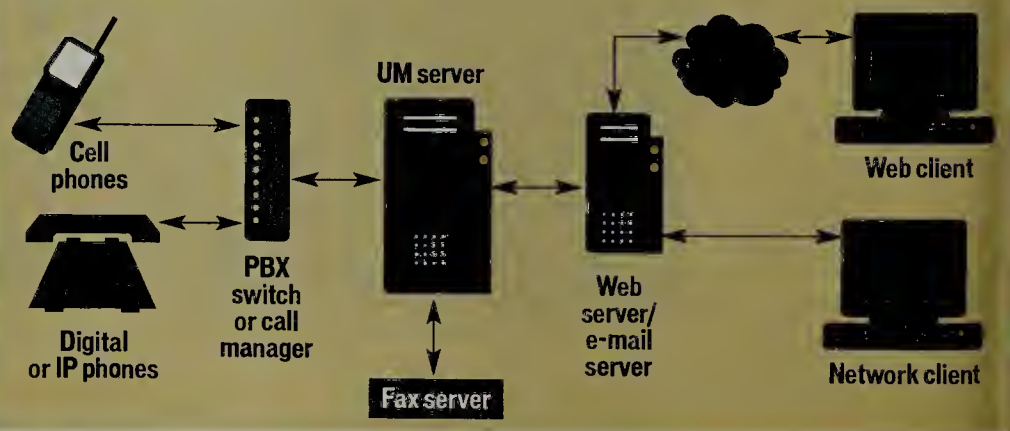
Unified messaging (UM) enables access to faxes, voice mail and e-mail from a single mailbox that users can reach either by telephone or a computer equipped with speakers.

Computer users can select and play voice-mail recordings that appear in their in-boxes. Telephone users can both retrieve voice mail and hear text-to-voice translations of e-mail messages. Messages of any type can be saved, answered, filed, sorted and forwarded.

While UM is restricted to recorded messages, unified communications technology extends UM by adding real-time access to contact lists, as well as automatic dialing and teleconferencing services. As the market evolves, UM products are gradually including these capabilities.

UM Systems: Finding Common Ground

A UM server accepts voice mail from telephone systems and data from fax and e-mail servers. It then provides centralized access to all message types by way of telephone or computer. Users can play voice mail and view faxes from their e-mail in-boxes; a text-to-speech engine allows dial-up users to hear e-mail messages as well as voice mail.



Insurer Takes Middleware Road

FIELD NOTES

State Compensation Insurance Fund, a nonprofit organization that provides workers' compensation insurance in California, adopted unified messaging (UM) by installing middleware, rather than replacing its voice mail, e-mail and fax systems.

Previously, mobile workers used cell phones and laptops to access the network, but that was far from ideal.

"Dial-up network access is not always convenient," says Bryan Townsend, telecommunications manager at the fund's San Francisco headquarters. "Everyone hates having to dial up and wait 10 minutes to boot up and log in."

State Fund uses Avaya Inc.'s Octel Aria product for voice mail and faxes and Microsoft Exchange for e-mail. To link the systems and make them accessible remotely, it rolled out Avaya's Unified Communication Center (UCC). Townsend says he figured that the software, still in beta, would integrate well with his Avaya private branch exchanges, voice-mail equipment and call center applications.

Townsend says that after the initial planning, it took two days to load the software in a test network. As part of the deployment, Townsend also had to create special Microsoft Software Installer packages to deploy UCC applets to locked-down desktops.

After about two months of testing, 150 employees began using UCC. Most wanted only remote voice-command access, however, which limited the amount of desktop client software that needed to be installed.

The UCC server can access the features of Exchange, including e-mail, calendaring and contact lists. Remote workers can call in and control those functions through a set of voice commands. Avaya provides cheat sheets with the most common instructions.

"The biggest thing they like is having all contact information a phone call away," says Townsend.

Based on feedback from initial users, State Fund is rolling out UCC to the rest of the company — an additional 1,000 people. The key to achieving a successful deployment, Townsend says, was finding out what users wanted and designing the system to meet their needs.

"I spent time talking to mobile employees," he says. "We achieved a consensus on what they wanted and then provided it." ◗

MORE ONLINE

Does UM Result in ROI? Users weigh in:
QuickLink 33613

UM Information: Visit our site for a list of resources:
QuickLink 33614
www.computerworld.com

Three Roads to Unification

Users who have decided to implement unified messaging (UM) have three basic choices: go with an add-on product supplied by a private branch exchange (PBX) switch vendor, buy a hardware-independent system or outsource.

1 SWITCH ADD-ONS
The major PBX and IP telephony system manufacturers all offer UM add-ons to their hardware. These include Nortel Networks Ltd.'s CallPilot, Avaya Inc.'s Unified Communications Center and Cisco Systems Inc.'s Unity.

2 INDEPENDENT OFFERINGS
Acquisitions by switch manufacturers have reduced the number of independents. The largest remaining independent is Captaris Inc., whose CallXpress runs on Windows.

3 OUTSOURCING
"If a company is already outsourcing Exchange, it makes sense to outsource UM," says Blair Pleasant, an analyst at The Pelorus Group in Raritan, N.J.

Most wireless phone service vendors offer UM packages. Services are also available from specialized UM application service providers such as j2 Global Communications Inc. in Hollywood, Blue-silicon in Santa Clara, Calif., and Call Sciences Inc. in Edison, N.J.

Infrastructure Upgrade Facilitates UM Move

William L. Lyon & Associates Inc., Sacramento, Calif.

INTERVIEWEE: **Lynn Ryan,** IT director

WHO THEY ARE: California's fifth-largest residential real estate firm, with more than 500 sales employees in 10 offices

GOAL: Find a less-expensive, Windows-based alternative to the firm's proprietary Octel voice-mail system from Avaya Inc., and consider unified messaging options as part of the process.

STRATEGY: Install Captaris Inc.'s CallXpress when new offices open or when replacing legacy voice-mail equipment in existing offices. Use Captaris' OmniBridge for interoffice communications with legacy Octel systems.

CHALLENGES: Ensuring that the system had familiar features so the switchover wouldn't disrupt production. Ryan brought in Sacramento, Calif.-based integrator ProLogic Communications Inc., which configured the system so it would work the way users preferred.

ISSUES: Early on, staffers in one office weren't receiving messages. Ryan traced the problem to a message stuck in a queue in the OmniBridge server. Deleting it resolved the problem.

A 128K bit/sec. data circuit between Microsoft Exchange and CallXpress servers was too slow when users called in for e-mail. An upgrade to a faster T1 line resolved the problem.

PAYOFF: CallXpress' upfront cost was lower than that of Octel, and it offered simpler administration. However, users have been slow to adopt all of the features available to them, so the technology's full benefit hasn't yet been realized.

COMMENTS: "We felt we were being held hostage because of proprietary hardware," Ryan says. "When we replaced a PBX with a different brand, it would have cost us $10,000 just to get a new interface card installed for Octel. With a Windows-based voice-mail system, we can replace components with industry-standard equipment."

UM Integration Brings Efficiency, Security

Eglin Air Force Base, Fort Walton Beach, Fla.

INTERVIEWEE: **Glenn Harley,** telecommunications systems department lead

WHO THEY ARE: A Department of Defense site for developing, testing and operating airborne weapons systems

GOAL: Eliminate the manpower required to manually answer and route 4,000 calls daily and the time required to take messages. Avoid having sensitive incoming fax documents sitting on a shared fax machine.

STRATEGY: Create an integrated voice, e-mail and fax system using Active Voice LLC's Repartee 7.60. Build a single directory containing all the user names and extensions across three sites.

CHALLENGES: Harley was initially concerned about how well Repartee would integrate with his existing NEC Corp. and Avaya Inc. telephone equipment, but he says he didn't experience any problems. His staff installed it using only telephone support from Active Voice.

ISSUES: Harley started with a beta version, which restricted users to entering only the first three letters of a name for telephone number searches – a problem in a 700-name directory. The production version allows up to 30 characters.

PAYOFF: The unified messaging system has cut down the receptionist load. Users now manage faxes and voice mail from the desktop – forwarding messages and saving them to folders, for example – with the same ease as managing e-mail. Faxes now go directly to the recipient's PC.

COMMENTS: Harley has one caveat: "Make sure you have enough voice-mail ports on the system to handle the traffic."

FAST RELIEF

FOR ANXIETY, STRESS

AND OTHER COMMON SYMPTOMS OF

HIPAA

IMPLEMENTATION.

SYBASE e-BUSINESS SOFTWARE. EVERYTHING WORKS

HIPAA implementation deadlines are approaching. Rapidly.

This doesn't necessarily have to be a cause for anxiety. You can accept HIPAA as an organizational challenge to meet the mandated deadlines, or you can view it as an opportunity to improve your systems and processes, and create a competitive advantage. We can help you do both.

HIPAA Studio is a software suite specifically designed to help you implement a robust, flexible platform for enterprise integration while achieving compliance with HIPAA transaction standards.

HIPAA Studio leverages the knowledge and capabilities we've developed from nearly 20 years of managing information, application and process integration.

HIPAA ACCELERATOR AND EDI SERVER

Working with HIPAA Studio, you'll be able to transform internal data into HIPAA-compliant EDI transactions you can route to trading partners. You'll also be able to transform HIPAA-compliant data received from trading partners and integrate it with your internal systems. To accomplish this task, HIPAA Studio features our very aptly named HIPAA Accelerator.™

HIPAA Accelerator does exactly what its name suggests. By providing you with a complete set of HIPAA-compliant X12 standards with compliance maps for each and every transaction.

The Software Integration Company

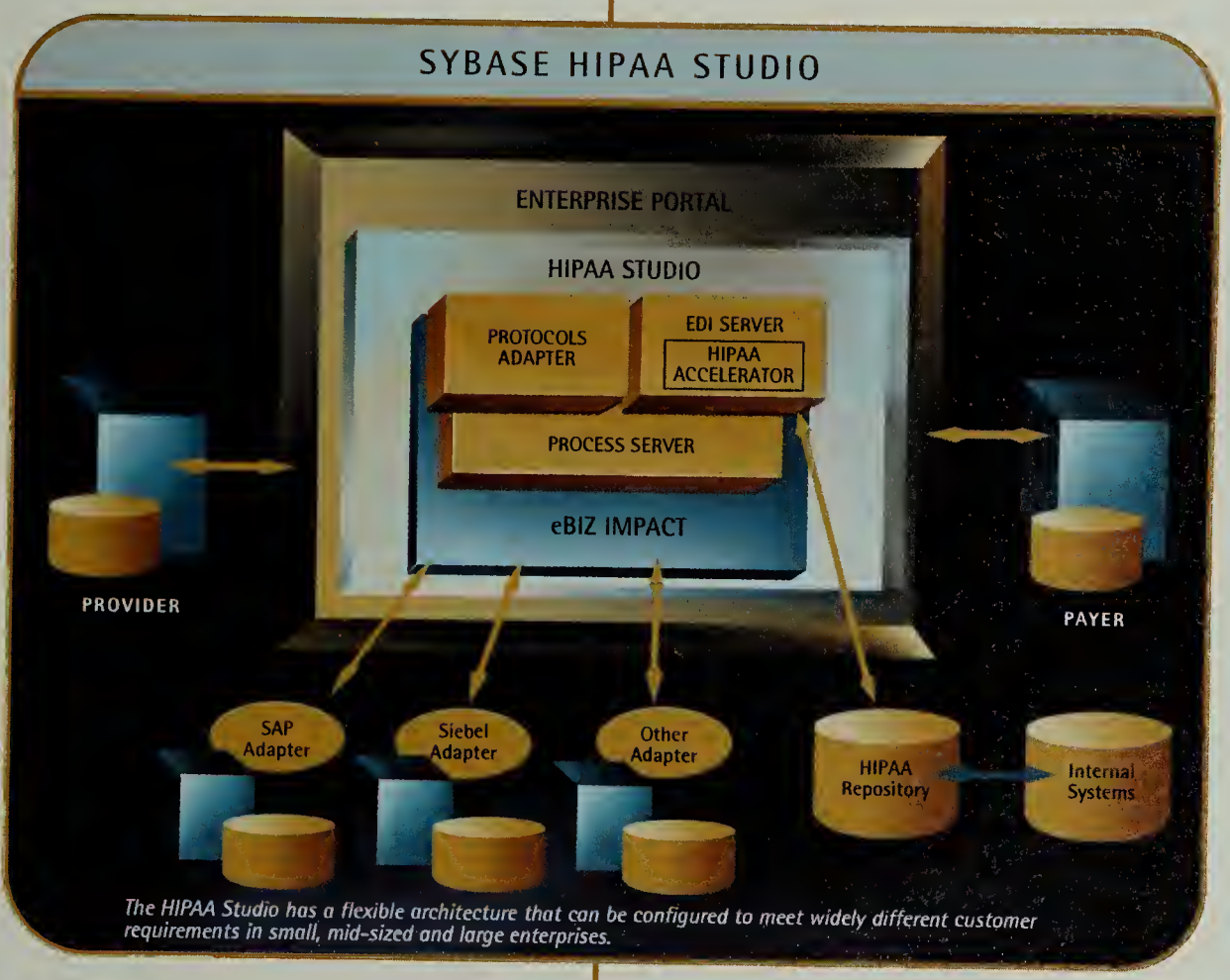
We can help you integrate all the disparate data and business applications running in your enterprise and extend them to any location in the world: platforms, application servers, components, databases, applications, processes, integration brokers, even mobile/wireless solutions. By choosing Sybase, you can preserve and extend your existing infrastructure investments, avoid proprietary traps, and improve efficiency across the enterprise.

The second key component of HIPAA Studio is EDI Server, featuring all the tools you need to seamlessly transform large volumes of data and share it with your trading partners.

In addition to its wide support of standards and any-to-any mapping capabilities, EDI Server also enables you to develop powerful, integrated, n-tier Web applications. (This

engine for business process management and more complex integration requirements.

And the latest addition to our HIPAA Studio is the HIPAA Repository.™ HIPAA Repository maintains all the data that is found in your HIPAA transactions. HIPAA Repository works with all HIPAA-related solutions, including, of course, our own HIPAA Studio.



The HIPAA Studio has a flexible architecture that can be configured to meet widely different customer requirements in small, mid-sized and large enterprises.

may be the appropriate time to remind you that Sybase is a leader in Enterprise Portal technology.)

With EDI Server, you can rapidly develop e-Business communities, support multiple message formats and manage even greater transaction volumes. EDI Server boasts the fastest processing speeds in the industry and seamless integration with any ODBC-compliant database.

THE NEXT STEPS FORWARD

Our Sybase Process Server takes you past compliance and into the arena of improved process management and improved back-end integration for competitive advantages in the marketplace. It's an optional rules-based

Sybase HIPAA Studio gives you the tools you need to make your compliance dates with confidence. They also put you in a position to actually create new competitive advantages for your organization that will pay dividends well into the future. All without a trace of anxiety.

Find out how to get your company started at sybase.com/integrationsolutions.

SYBASE®

The Health Insurance Portability and Accountability Act (HIPAA) deadlines for compliance are rapidly approaching. HIPAA Studio can help you meet the compliance challenge quickly and smoothly.

©2002 Sybase, Inc. All rights reserved. All trademarks are the property of their respective owners.

Scale-Free Networks

DEFINITION

Scale-free networks, including the Internet, are characterized by an uneven distribution of connectedness. Instead of the nodes of these networks having a random pattern of connections, some nodes act as "very connected" hubs, a fact that dramatically influences the way the network operates.

BY JAN MATLIS

Using a Web crawler, physicist Albert-Laszlo Barabasi and his colleagues at the University of Notre Dame in Indiana in 1998 mapped the connectedness of the Web. They were surprised to find that the structure of the Web didn't conform to the then-accepted model of random connectivity. Instead, their experiment yielded a connectivity map that they christened "scale-free."

QUICK STUDY

Barabasi and his team had been doing work that modeled surfaces in terms of fractals, which are also scale-free. Their discoveries about networks have been found to have implications well beyond the Internet; the notion of scale-free networks has turned the study of a number of fields upside down. Scale-free networks have been used to explain behaviors as diverse as those of power grids, the stock market and cancerous cells, as well as the dispersal of sexually transmitted diseases.

Put simply, the nodes of a scale-free network aren't randomly or evenly connected. Scale-free networks include many "very connected" nodes, hubs of connectivity that shape the way the network operates. The ratio of very connected nodes to the number of nodes in the rest of the network remains constant as the network changes in size.

In contrast, random connectivity distributions — the kinds of models used to study networks like the Internet before Barabasi and his team made their observation — predicted that there would be no well-connected nodes, or that there would be so few that they would be statistically insignificant. Although not all nodes in that kind of network would be connected to the same degree, most would have a number of connections hovering around a small, average value. Also, as a randomly distributed network grows, the relative number of very connected nodes decreases.

Significant Differences

The ramifications of this difference between the two types of networks are significant, but it's worth pointing out that both scale-free and randomly distributed networks can be what are called "small world" networks. That means it doesn't take many hops to get from one node to another — the science behind the notion that there are only six degrees of separation between any two people in the world. So, in both scale-free and randomly distributed networks, with or without very connected nodes, it may not take many hops for a node to make a connection with another node. There's a good chance, though, that in a scale-free network, many transactions would be funneled through one of the well-connected hub nodes — one like Yahoo Inc.'s Web portal.

Because of these differences, the two types of networks behave differently as they break down. The connectedness of a randomly distributed network decays steadily as nodes fail, slowly breaking into smaller, separate domains that are unable to communicate.

Resists Random Failure

Scale-free networks, on the other hand, may show almost no degradation as random nodes fail. With their very connected nodes, which are statistically unlikely to fail under random conditions, connectivity in the network is maintained. It takes quite a lot of random failure before the hubs are wiped out, and only then does the network stop working. (Of course, there's always the possibility that the very connected nodes would be the first to go.)

In a targeted attack, in which failures aren't random but are the result of mischief, or worse, directed at hubs, the scale-free network fails catastrophically. Take out the very connected nodes, and the whole network stops functioning. In these days of concern about cyberattacks on the critical infrastructure, whether the nodes on the network in question are randomly distributed or are scale-free makes a big difference.

Epidemiologists are also pondering the significance of scale-free connectivity.

Until now, it has been accepted that stopping sexually transmitted diseases requires reaching or immunizing a large proportion of the population; most contacts will be safe, and the disease will no longer spread. But if societies of people include the very connected individuals of scale-free networks — individuals who have sex lives that are quantitatively different from those of their peers — then health offensives will fail unless they target these individuals. These individuals will propagate the disease no matter how many of their more subdued neighbors are immunized.

Now consider the following: Geographic connectivity of Internet nodes is scale-free, the number of links on Web pages is scale-free, Web users belong to interest groups that are connected in a scale-free way, and e-mails propagate in a scale-free way. Barabasi's model of the Internet tells us that stopping a computer virus from spreading requires that we focus on protecting the hubs. ◗

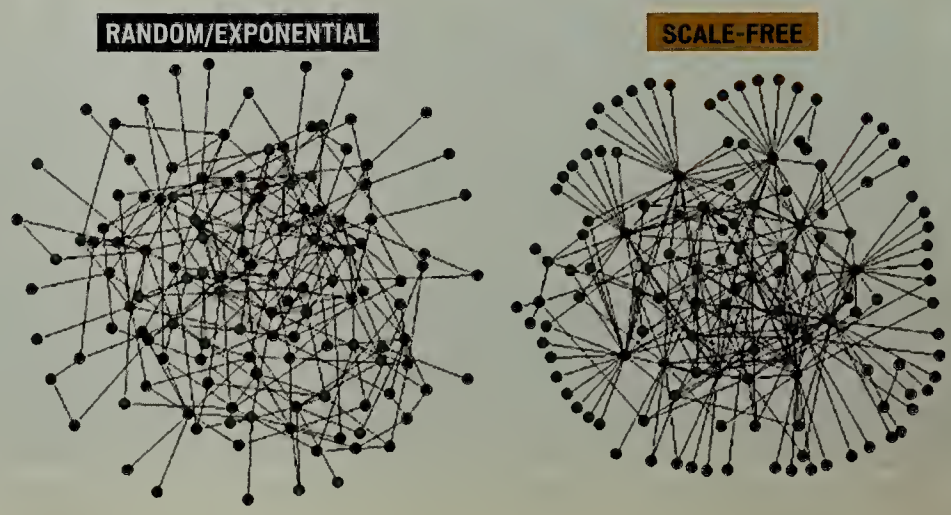
Matlis is a freelance writer in Newton, Mass.

Are there technologies or issues you'd like to learn about in QuickStudy? Send your ideas to quickstudy@computerworld.com.

To find a complete archive of our QuickStudies, go online to **computerworld.com/quickstudies**

Comparing Random and Scale-Free Distribution

In the random network, the five nodes with the most links (in red) are connected to only 27% of all nodes (green). In the scale-free network, the five most connected nodes (red) are connected to 60% of all nodes (green).



SOURCE: THE JOURNAL *NATURE*

Their files.
Your weekend.
Gone.
NEW
Zip 750MB
HDD
NAS
Protecting data. Storing data. Sharing data.
From notebooks to networks, Iomega takes care
of critical business data, so you can concentrate
on critical weekend plans.
Check out the fast, new Zip 750MB storage solution and sign up for a chance to win a Microsoft® Xbox™ and other cool products in the $2500 Technology Shopping Spree! To enter, visit http://go.iomega.com/x28
iomega
We live in a world of data.
Protect yours.
http://go.iomega.com/x28

Experts Stumble on PKI Security Project

An effort to rework a public-key infrastructure brings big-bucks consultants and dime-store advice. By Vince Tuesday

SECURITY MANAGER'S JOURNAL

FIVE YEARS AGO, before I was hired, my company rolled out a financial services application to 20,000 users at 900 companies in 18 countries. The company knew it needed something better than just user names and passwords for authentication, so it built a public-key infrastructure (PKI).

That technology decision has come back to haunt us. We're struggling to make the infrastructure work better, and finding qualified help hasn't been easy.

Using PKI, our central application that needs to verify a user's identity can ask the user to perform a calculation that is possible only with his private key. The private key isn't held in the central server, and it isn't transmitted, making it much harder to steal or intercept.

There are weaknesses, though. While working out the private key is difficult, it can be done if you have very fast computers — and enough time. And private keys can be stolen from users. Therefore, to ensure that the system remains secure, we set the keys to automatically expire every four years. That is where our problems began.

Key Headaches

A year and a half ago, we had to issue a new key to every user. It was a painful, manual process that took months and annoyed everyone. It hurt my group because we had to dedicate skilled staff to the low-level task of producing the keys and then following a manual process to send those keys to every user. We used encrypted, self-extracting executables to e-mail the keys out.

Many users' firewalls and e-mail gateways are configured to quarantine or strip attachments that are difficult to scan or that could be a virus. As each of the steps we used to send the keys was likely to hit a block, sometimes it was a problem for our users to even get the keys, let alone go through the process of installing them in the right place. Now that we've distributed the keys, we aren't looking forward to the next expiration.

When the system was built, PKI was rare in the commercial world. There weren't any mature, reasonably priced commercial products, so we built our own. It's clunky, and its bad interface adds to the work of issuing keys, but at least it conforms to the international standards that determine how to produce the keys.

Since then, PKI has grown in popularity, and competition has driven down the cost of PKI software. There are now several very slick packages available.

> **We were hoping for tailored guidance, but instead the consultants pointed us at two of the three biggest suppliers.**

In order to reduce the pain of the next key reissue, we're investigating PKI product and service options. Our custom code is standards-based, so we can at least replace the core of the PKI without having to rewrite our application authentication code.

Consultant Concerns

I have a strong background in the academic theory of cryptography but not much direct experience with large-scale deployments of these PKI suites. Therefore, I decided to get some help from some highly recommended consultants who do this kind of thing all the time.

We began our meeting by explaining our situation and what we hoped to do. As the consultants spoke, however, I began to feel nervous. They seemed to be falling into the same kind of errors about cryptographic key sizes that I wrote about in my last column [QuickLink 33333].

The strangest moment was when one of them informed us that the root key (the key we use to issue all the other users' keys) must be 512 bits larger than the users' keys.

Clearly, you should make the keys as large as possible so they will take longer to crack, while keeping them a reasonable length for easy storage and fast processing. The root key is more valuable than the user keys, because you could issue your own user keys if you cracked the root key. Therefore, making the root key larger than the user keys is sensible. But why an arbitrary value for how much larger it should be? I asked the consultant to explain. "Best practices," he said, but he could offer no further explanation.

Relations deteriorated further when we asked which vendors the consultant suggested we investigate for our particular needs. These consultants sometimes serve as a professional services arm of RSA Security Inc. in Bedford, Mass., and Entrust Inc. in Addison, Texas, so we weren't surprised to hear them recommended only those two firms.

VeriSign Inc. in Mountain View, Calif., RSA and Entrust are the three biggest names in the PKI market. We were hoping for tailored guidance, but instead the consultants pointed us at two of the three biggest suppliers. That wasn't the best way to convince us they're worth their startlingly high consultancy fees.

Then we explained that we need to migrate to a new PKI product quickly to ensure that everything will be completed before the next key expiration occurs. That would let us save staff time and ease the pain for users, as we could reissue their keys once, rather than twice, over a short time span. The response? "Why not just extend the root key for a few years to give you breathing space? The users would never know, right?"

This is like a grocery store deciding to make a little extra money by adding extra days to the expiration date on their milk. The customers would never know, right? Yes, but I know, and I'm the one responsible for security around here.

In the end, I'm afraid we didn't learn much about which PKI product we should buy. But we did learn that we wouldn't be using these consultants to help us with the choice. Now we have to decide what to do next.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com, or join the discussion in our forum:

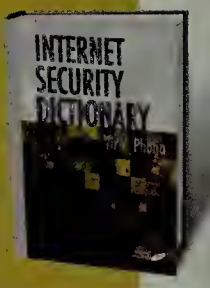
QuickLink a1590

To find a complete archive of our Security Manager's Journals, go online to

computerworld.com/secjournal

SECURITY LOG

Security Bookshelf



■ *Internet Security Dictionary*, by Vir V. Phoha; Springer-Verlag Heidelberg, 2002.

In the fast-moving world of Internet security, it's hard to be sure that everyone is using the same jargon. At last a dictionary has been put together to fill the gaps. This title is a useful resource for anyone who has to communicate about Internet security. I looked up all the terms I use and found valuable definitions for all of them except *DMZ* – one for the next edition, perhaps?

–Vince Tuesday

Baltimore Adds PKI Security Suite

Baltimore Technologies PLC in Needham, Mass., hopes to simplify the deployment of PKI security tools by integrating them with business applications. The recently announced Trusted Business Suite consists of three sets of security modules, each integrated with a common business application to secure networks, messaging systems and documents. The modules come preconfigured and ready to work out of the box, the company says.

Hacker Target No. 1: Windows vs. Linux

Earlier this year, Linux Web servers were getting hacked more often than systems running Microsoft Windows. But now Windows once again tops the list of most targeted online operating systems, according to Mi2g Ltd., a security intelligence company in London.

Widely publicized vulnerabilities in popular applications for Linux led to a spike in April and May in defacements of Web sites hosted on servers running Linux. However, in June and July, more Web sites hosted on Windows systems were successfully attacked.

@server

The new IBM @server BladeCenter.™ Now you can remotely deploy new servers in minutes rather than hours or days.[1] Inside the new BladeCenter, individual blade servers can be hot-swapped in and out of a single chassis.[2] And because BladeCenter uses Intel® Xeon™ processor-based blades, you get flexibility without sacrificing the performance you need for your data center. The result is an incredibly dynamic systems environment, one that lets you easily manage and integrate your storage, network and applications. You can scale out to add capacity, reconfigure on the fly and create an infrastructure with no single point of failure. To get an interactive demo on BladeCenter, or for special financing information, visit **ibm.com**/eserver/bladecenter or call 1 800 426-7777 and mention priority code 102AX004.

@business is the game. Play to win.™

intel inside XEON

IBM

WHEN YOU CAN
CHANGE YOUR
INFRASTRUCTURE
THIS EASILY,
YOU WILL.

IBM

IBM®

[1]Customer experience will vary depending upon configuration and other factors. [2]Blade servers for BladeCenter are sold separately. IBM, the e-business logo, eServer, BladeCenter and *e-business is the game. Play to win* are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Intel, the Intel Inside logo and Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of others. ©2002 IBM Corporation. All rights reserved.

BRIEFS

AppIQ Launches SRM Software

AppIQ Inc. in Burlington, Mass., late last month announced a storage resource management (SRM) software suite based on the Common Information Model and Web-Based Enterprise Management standards. The AppIQ Solution Suite – which includes AppIQ Manager, AppIQ for Oracle and AppIQ for Exchange – was designed to unify the management of applications, servers, storage networks and storage subsystems. Pricing for the software will start at $10,000 per terabyte of managed storage.

Amplify.net Offers WAN Gateways

Start-up Amplify.net Inc. in Fremont, Calif., has begun shipping its iSurfJanus family of wide-area network (WAN) gateways for branch offices. The new products are designed to provide WAN backup, load balancing, and firewall and virtual private network (VPN) protection. The CX model consists of two WAN ports with 10M bit/sec. downstream and 4M bit/sec. upstream. The DX supports 30M bit/sec. downstream and 30M bit/sec. upstream. The RX supports three 100M bit/sec. WAN ports. VPN options are available in all three product categories, with prices ranging from $995 to $4,995.

Bluetooth Tools For Palm Devices

Colligo Networks Inc. in Vancouver, British Columbia, announced that its BlueBoard and BlueChat applications, both based on Bluetooth technology, are being bundled into the new Tungsten T handhelds from Milpitas, Calif.-based Palm Inc. Colligo Meeting for handhelds running Palm OS 4 is available at *www.colligo.com/store* for $19.95 per license. The applications provide messaging, whiteboarding and meeting scheduling for Bluetooth-enabled Palm handhelds.

ROBERT L. MITCHELL

A Template for Win 2k Security

IT'S A BRIGHT Indian summer day in Manchester, N.H., but I won't need my sunglasses. On this day, I'm cloistered away with 21 IT professionals in a dark, windowless room at the local Holiday Inn for a hands-on tour of the Windows 2000 Professional Gold Standard security benchmark.

The idea behind the benchmark — to establish a minimum baseline security configuration that every Windows 2000 Professional workstation should meet — is not new. What is new is that several organizations, including the Center for Internet Security (CIS), the SANS Institute, four federal agencies and Microsoft Corp., have agreed to endorse a common security template. That fact begs the question: If everyone — even Microsoft — agrees that this is the absolute minimum security level that the business version of Windows 2000 must meet, why isn't this template offered with the default install?

ROBERT L. MITCHELL is *Computerworld*'s technology evaluations editor. Contact him at robert_mitchell@computerworld.com.

The training session, a certificate program sponsored by the SANS Institute, has brought IT professionals from a mix of business, government and vendor organizations.

Implementing the recommended settings in the template isn't rocket science — setting the minimum password length to eight characters, for example — but there are about 300 specific changes that will take some time to review. Attendee Greg Owen, a senior network engineer at security consultancy Vibren Technologies Inc. in Boxboro, Mass., acknowledges that he sees nothing new here, but he views the benchmark as a positive step. "[It] should take some of the confusion out of the configuration for IT managers who don't know where to start," he explains.

The benchmark, which I download from the CIS Web site, also includes useful tools for auditing and implementing the security template. It consists of the Security Configuration and Analysis snap-in; the CIS Security Scoring Tool, which rates the relative security of the computer before and after you apply the template settings; and a benchmarking program, the Gold Standard security template, which snaps into Windows' Microsoft Management Console.

I run the analysis tool on my laptop, with its freshly minted Win 2k install. It analyzes my machine and presents a side-by-side comparison of current and recommended settings.

The task of reviewing and thinking through the 300 or so recommended settings is a challenge. For example, you don't want to deploy a template that disallows removal of the NT file system media if your company uses Iomega Jaz drives to store and transport computer-aided designs or graphics files. Fortunately, you can customize your own baseline and merge in additional template layers for specific users or groups.

Running the scoring tool is pretty slick. It tallies up points for service packs and hot fixes as well as registry settings and ranks my machine on a scale of 1 to 10. My out-of-the-box install initially comes in at an anemic 1.4. But applying the patches and template boosts my score to 9.4 — which sounds great until the instructor reminds me that I've merely come close to reaching the *minimum* level of security. This makes me wonder if the relative nature of this score might be lost on some users, who may gain a false sense of security from seeing that wonderful 9.4. Certainly, no user will ever successfully secure a system by aspiring to the baseline.

But our SANS Institute instructor is quick to remind us that the template won't be effective unless it's deployed within the context of a well-thought-out security policy. The current template doesn't apply to Windows 2000 Server or Windows XP (those are in the works), it won't protect workstations from application-level issues, and it certainly won't protect against sloppy management practices.

Broad acceptance will require more than just management behavior modification — or a nationwide SANS training tour. A requirement that all government machines use the template will help. But ultimate success will come only when the operating system's creators legitimize the Gold Standard by including it as the default enterprise security template with Windows 2000 Professional. Microsoft says its goal is to have one consistent set of security templates. Surely, the Gold Standard should be part of it. ◗

MORE ON THE GOLD STANDARD

For links to sites with more information on the Windows 2000 Professional Gold Standard, visit our Web site:

QuickLink 33500
www.computerworld.com

Want Our Opinion? For more columns and links to our archives, go to:
www.computerworld.com/opinions

4th Annual
COMPUTERWORLD PREMIER 100 IT LEADERS CONFERENCE

February 23-25, 2003
J.W. Marriott
Desert Ridge Resort
Scottsdale, Arizona

MARK YOUR CALENDAR FOR FEBRUARY 23-25

Explore Key IT Strategies with Award-Winning Enterprise Leaders!

Exchange Practical Solutions and Ideas with Leading IT Executives

Proving IT Value
Gain expertise on the art of negotiating and creating true partnerships with vendors. Profit from proven IT asset procurement and management tips.

Integrating Technology and Business
Acquire key strategies for application integration and learn the latest about .Net, Web services, mobile technologies, CRM and business intelligence software.

Securing the Enterprise
Hear how leading users and suppliers are protecting the enterprise from risks, assuring business continuity, securing e-business and managing wireless access.

Upgrading the Infrastructure
Identify best practices to leverage data management, storage and network infrastructures. Master the evaluation of outsourcing deals and the use of service providers.

HERE'S WHAT PAST ATTENDEES SAY...

"... delivers value by bringing together senior-level IT decision-makers to share their experiences ..."

Ralph Szygenda
Group VP & CIO
General Motors

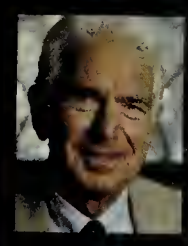
"... is wonderful ... the level of expertise among the attendees is an invaluable resource ..."

Evelyn Follit
SVP & CIO
Radio Shack

"... is extremely valuable ... a benefit to any IT leader ..."

Rick Stiegler
CIO
Lending Tree

SEE AND HEAR:



Warren Bennis
- Distinguished Professor of Management, University of Southern California
- Chairman of the Advisory Board, Center for Public Leadership, Harvard University
- Adviser to four U.S. Presidents

Selected Speakers Include:

Susan Unger
CIO
Daimler/Chrysler

Curtis Robb
SVP & CIO
Delta Air Lines

Scott Charney
Chief Security Strategist
Microsoft

For more information or to register visit: **www.premier100.com**

For companies interested in sponsoring and exhibiting, contact your Computerworld sales executive, or Ann Harris at 508-820-8667

Analysts estimate that 40% of IBM's operating profits are from mainframe software and maintenance*

Aren't you tired of paying your share?

Take your CICS to ASP.NET

You can substantially lower your overall IT costs by migrating CICS COBOL applications from your mainframe to ASP.NET using Fujitsu's NetCOBOL for .NET. By offloading applications, you save valuable CPU time and can often postpone upgrades. Given the size and critical nature of your legacy COBOL assets, you can't afford to rewrite all your applications in a new language to migrate to a new platform.

Remarkably, ASP.NET has a highly similar structure to CICS applications and Fujitsu Software has created a process through which we can quickly migrate CICS to ASP.NET. NetCOBOL for .NET allows you to reduce your dependency on mainframe environments, effectively bridging the gulf between where your business applications reside today and where you want them to be tomorrow. It allows you to extend access to your company's information assets and lower the cost of the technology infrastructure supporting your business goals.

*Source: FORTUNE July 2002

But don't just take our word for it! Let us prove it to you via the NetReady Partner Program. Our highly trained consultants will help you leverage your current wealth of business assets, and unify them with new development initiatives on Windows-based platforms. Plus, using leading-edge development environments, your developers will become more productive, delivering new functionality in much less time without taking a huge bite out of your production schedule or your budget.

Please call us at (800) 545-6774 or (408) 428-0300. Or visit our web site at **http://www.netcobol.com/nrpp**.

FUJITSU

THE POSSIBILITIES ARE INFINITE

Trading Places
Looking to better align business and technology objectives, more companies are cross-training workers, such as W.W. Grainger's Tim Ferrarell, to the point where it's not so easy to tell their sales reps from their IT pros. **Page 52**

Calculating Change Upfront
Buying and installing new enterprise software entails changes in workflows, employee job responsibilities and business processes, all of which should be included in the initial business case for a new software investment, writes columnist John Berry. **Page 54**

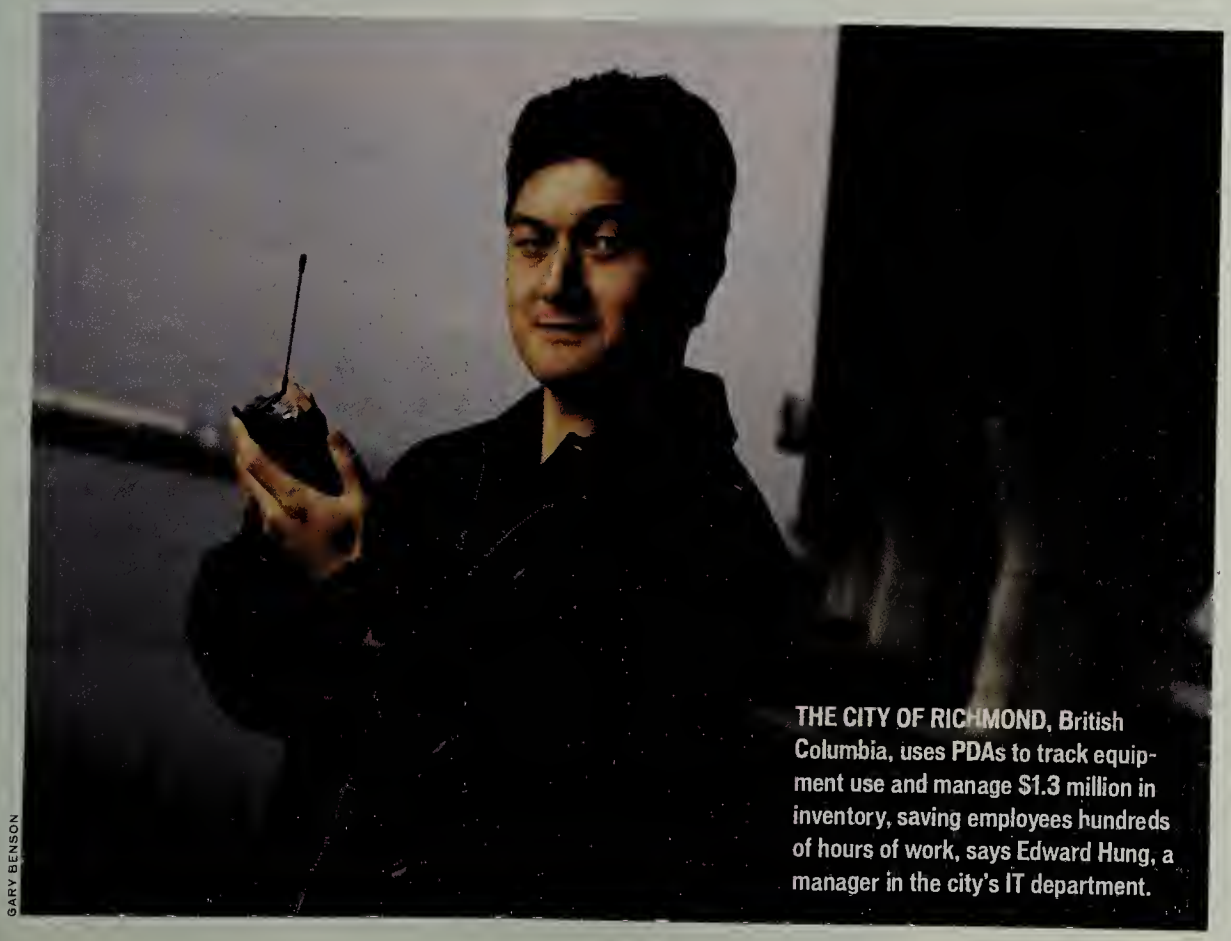
QUOTE OF THE WEEK

"Embracing all these partnerships is a no-regret decision. Had I deluded myself and thought that all these areas were core competencies . . . I would have had much less capacity to do things that have had true strategic value in the eyes of our business partners.

–John McKinley, CIO, Merrill Lynch

Beyond COOL

Cheaper, easier-to-use PDAs tackle real work at efficiency- and cost-conscious companies. **By Connie Winkler**



GARY BENSON

THE CITY OF RICHMOND, British Columbia, uses PDAs to track equipment use and manage $1.3 million in inventory, saving employees hundreds of hours of work, says Edward Hung, a manager in the city's IT department.

SURE THEY'RE COOL. But a growing number of companies are finding that personal digital assistants (PDA) are also more versatile than Swiss Army Knives for solving a wide variety of business needs on the cheap.

"None of our competitors have anything like our PDA applications, and they don't appear to be looking [at them]. We are amazed," says operations manager David Morton, discussing the PDA-based time- and equipment-tracking system at Tim Beaty Builders Inc. in Denton, Texas. It has taken about two years for the system to pay for itself, thanks largely to the hours that managers no longer need to spend collecting and tracking payroll information. Managers also know which projects are making or losing money and how much.

"It gives us a competitive advantage because our field personnel are more informed and, as a result, more responsive to our customers needs -- not to mention the cost savings we enjoy," says Morton.

A 40-person regional construction company, Tim Beaty is one of a growing number of companies using PDAs as portable record-keeping or time-clock devices that can be linked to other data collection and corporate applications.

Edward Hung, a manager in the IT department for the city of Richmond, British Columbia, uses PDAs to track heavy-duty equipment use and manage $1.3 million in inventory. He says the hundreds of hours that the city saves using PDAs are devoted to other projects.

Introduced in 1993 as personal and business electronic organizers to replace paper calendars and to-do lists, PDAs quickly became must-haves for executives. The price of the devices, about $500, was a big selling point, especially when compared with the prices of older, bulkier handhelds that typically were unique to each business and could cost up to $1,500 each. Now, with the availability of mainstream business and wireless applications, lower prices and increased memory and capabilities, PDAs are, at the very least, an affordable way to cut paperwork and ensure greater data accuracy, proponents say.

"We started by asking how technology could simplify tasks and reduce time and costs," says Julie Pottebaum, a spokeswoman for McDonald's Corp. in Oak Brook, Ill. In a test at five restaurants, McDonald's managers are using PDAs from Symbol Technologies Inc. in Holtsville, N.Y., to replace paper checklists for collecting food safety information.

"With less paperwork, managers have more time to spend on the floor of the restaurant," says Pottebaum, noting that the PDA-based food safety appli-

TYING IT ALL TOGETHER

BECAUSE SOFTWARE for PDAs is still evolving, companies often need to rely on a team of developers, service providers and the makers of handheld devices when creating applications. Here are a few tips from early adopters for helping all the players involved work well together:

- Establish a single vision of the final system.
- Remain flexible. "We've asked for several derivations to the original software, and our vendor has been refreshingly responsive – a pleasant surprise over more 'rigid' developers in the past," says David Morton, operations manager at Tim Beaty Builders.
- Tailor software design and training to users of the new PDA-based system. "Because our PDAs are used by painters, plumbers, truck drivers, equipment operators and general laborers, we were concerned that they could be effective with them," recalls Morton. "But the system and forms are intuitive, and training is a two-hour session."

cation jointly developed with Cincinnati-based KTG Inc. saves managers an hour a day.

Because standard PDA software for handling business tasks is still emerging, developing applications for PDAs is typically a juggling act, with companies usually working with three or four outside software vendors and service providers. However, this is beginning to change as manufacturers increase the power and capabilities of their devices to accommodate the growing use of XML-based data and applications and the growth of Web services.

Instead of the entire PDA application having to reside on the device, XML enables a big chunk of it to be offloaded to a larger system. "With XML and Web services, it's much easier to use these devices for more serious business applications — you don't have to have the whole application running on the device anymore," explains Ronald Schmelzer, a senior analyst at ZapThink LLC, an XML and Web services research company in Waltham, Mass.

This is possible because today's PDAs can more easily link to large applications via either wireless connections or direct connections to desktop PCs or other docking stations.

Given these increased capabilities, Schmelzer foresees business use of PDAs increasing within the next 12 to 18 months. He points to two markets where PDA use is likely to grow significantly: the finance and retail industries. For example, warehouse-store shoppers might use PDAs to ring up their orders as they walk down the aisles. And store employees might use the devices to scan and record inventories. In financial services, investors might use PDAs to conduct transactions from any location.

McDonald's, Tim Beaty and Richmond are ahead of the curve in testing or deploying PDAs to handle critical enterprise applications. ◗

Winkler is a former Computerworld *New York bureau chief who lives in Seattle. She can be reached at winklerconnie@yahoo.com.*

CASE STUDIES

McDONALD'S CORP.
Store the Food Data

With 30,000 restaurants around the world, the $40 billion fast food giant is very concerned about food safety. Since February, McDonald's managers at five U.S. restaurants have been testing four PDA-based applications, including one for tracking the temperature of food. Routinely throughout the day, managers measure temperatures by poking grilling hamburgers and other foods with a penlike probe plugged into a Pocket PC. They can also check the actual temperatures of cold and frozen foods, rather than just monitoring the temperatures of freezers and refrigerators. The readings are downloaded to the store's PC database, thereby replacing the paper processes.

"We wanted to find ways to better store data, report on it and analyze it," says Pottebaum.

McDonald's managers are also using PDAs to record and track information about restaurant appearance. On routine rounds of the premises, managers use PDAs to scan bar codes on lobby walls to verify regularly scheduled checks on restaurant appearance. This saves each manager about 30 minutes a month, the company estimates. Managers also use PDAs to schedule crew training, saving themselves about six hours a month.

McDonald's says it relied heavily on software providers and integrators in developing the restaurant PDA software. Its partners included Tangent Systems Inc. in Charlotte, N.C., and Symbol Technologies.

CITY OF RICHMOND
Keep the City Running

The city of Richmond, British Columbia, is working with its second PDA application after finding that the handhelds were ideal for monitoring the dikes and the 39 jet-engine-like pumps that hold back the surrounding waters for the almost-sea-level city.

About 18 employees, mostly in the city's water department, use PDAs to track and chart pump failures, tide levels, road temperatures, the weather, and waste water and rain levels. Pumps routinely fail, and workers need to be alerted fast; 65 alarms in 24 hours isn't unusual, whether it's raining or not. "There's always an emergency around here," says Edward Hung, manager of advanced research and technology in Richmond's IT department. The PDAs enable workers to identify problems such as aged pumps and potential trouble spots long before flooding starts, he adds.

Richmond's PDA application is part of an Internet-based system that connects to desktop PCs. To execute the integration, the IT team worked closely with New York-based Information Builders Inc., which provided its Web Focus software for the Internet-data connection, and with wireless providers AvantGo Inc. in Hayward, Calif., and Sierra Wireless Inc. in Richmond.

"Definitely, the [pump system] PDAs were an opening of the door," says Hung, adding that the city is now looking at handhelds rather than PCs for other uses.

For example, Richmond needs to better manage its warehouse, which stores about $1.3 million worth of inventory, ranging from paper products to street lamps and sewer and water pipes. "We don't need a person entering data for three or four hours at the end of the day, with all the mistakes that get made," Hung explains.

The goal is for workers to be able to walk to where the material is stored, scan the bar codes and, by the time they return to the office, find the necessary paperwork completed, printed and waiting. The input devices need to be easy to transport around the warehouse, so laptops aren't an option because they're too heavy and cumbersome. But PDAs aren't an option either, because their screens are small and because they might not last long in the rugged warehouse environment, notes Hung.

So the city is testing two ViewPads from Walnut, Calif.-based ViewSonic Corp. The ViewPads are close to the size of a pad of paper and have screens that are about 10 inches high. "They're rugged and lighter than a laptop, especially in this environment, which is not office-friendly," says Hung.

"The ViewPad is hooked wirelessly to our inventory system [through a LAN], so our staff is able to walk to the end of the warehouse and effortlessly count pipes," says Hung. And, because the city-developed tablet system links to Richmond's PeopleSoft inventory system, managers at city hall get automatic updates over the Internet.

"We don't have those numbers, but I can guess we're operating two to three times as efficiently as before," Hung says.

For pump monitoring, Hung finds that the PDAs, which send about 2 million transactions a week over the Internet to central databases, have saved hundreds of work hours, including in IT.

City workers and the IT group want to use tablet PCs at the water meter repair and equipment shops. "We have potential applications all over," says Hung about his busy showcase city, which hosts the area's airport and is joining nearby Vancouver's bid to host the 2010 Winter Olympics.

TIM BEATY BUILDERS INC.
Foundation for Success

At Tim Beaty Builders, about 25 of the company's 40 workers carry Palm handhelds for recording work hours, equipment operations and construction milestones, such as when cement is poured or when wiring inspections are completed. The biggest benefit has come from the payroll application. "We haven't done exhaustive calculations, but the savings in managers' time alone pays for the system. They used to spend 20% of their time on payroll; now it's considerably less," says David Morton, operations manager. "Everything else we get is gravy."

The construction company now knows whether it's making money on a project. This is especially critical because Tim Beaty handles many projects simultaneously, including commercial and residential construction, trucking, equipment operations, and industrial construction and maintenance. "That all sounds like pretty much the same thing, except that each of those disciplines requires different information and reporting," explains Morton.

Workers now record on their PDAs how much time they spend on each job. "That increased accuracy is [invaluable] because it affects both costs and revenue," Morton says, noting that some jobs are bids and some are billed on a cost-plus basis. In the past, hours worked weren't tied to specific projects, so the company may have spent too many hours on the bid projects or neglected to collect for extra hours on the cost-plus jobs.

In the wake of that success, Tim Beaty has added PDA software modules from Austin Lane Technologies Inc. in Denton, Texas. The new applications track equipment use and send alerts when it's time for repairs and when equipment is being underused.

The firm is also adding milestone checklists for cement prepouring inspections and building frames. "After you pour cement or hang sheetrock, it's too late to check for inspections," notes Morton.

In addition to Austin Lane, San Jose-based Pumatech Inc., a Palm forms software provider, and Milpitas, Calif.-based Palm Inc. have been working with the builder on its PDA projects.

– Connie Winkler

the SAP logo are registered trademarks of SAP AG in Germany and several other countries.

IT'S MARCH 3RD IN SHIPPING. IT'S MARCH 3RD IN SALES. TOO BAD IT'S JANUARY 3RD IN FINANCE.

It doesn't matter what business you're in; if everyone in your company is not working in real time at all times, you've got problems. Financial data isn't accurate; forecasting is imprecise; and investors don't know what to believe. mySAP™ Financials helps make sure there's one version of the truth across your entire enterprise, so your financial data gives you the kinds of insights you need to run your business. Now and into the future. For more information, visit sap.com/solutions/financials or call us at 800 880 1727.

THE BEST-RUN E-BUSINESSES RUN SAP

GIORGIO PALMISANO

CIO John McKinley: "Embracing all these partnerships is a no-regret decision."

JUMP BALL!

For Merrill Lynch's John McKinley, every IT service is up for grabs, and managing strategic service providers is a new core competency.

Q&A

When Merrill Lynch & Co. CIO **John McKinley** *talks, people listen to his ideas about managing the "virtual organization" — the intricate web of outsourced IT service partnerships that has become the strategic underpinning for many leading companies.*

For McKinley, every IT service is a "jump ball," and that perspective puts him ahead of CIOs at many information-intensive businesses who still tend to try to do it all in-house, says Eileen Birge, who follows IT vendor relationships for The Concours Group, a consulting firm in Kingwood, Texas. "You have to realize that your job is to put together the best portfolio," she explains. "You have to get over the ego threat that there might be people out there who can do it better. Merrill Lynch is a company where IT is incredibly strategic, and they have been willing to look at the best way to do this."

McKinley talked with Computerworld's *Kathleen Melymuka at Merrill's New York-based headquarters about progress in his four-year initiative to make managing the virtual organization a core IT competency.*

Why the "virtual organization"? I think you have to really challenge yourself, especially in austere times, to be a good portfolio manager and make effective use of any discretionary dollar you're allocated by your business partners.

What does that mean in IT? It means that when you look at service delivery, any area is a potential jump ball. Any area should be open for objective review to say, "Is this a core competency for us? Do we have competitive cost advantage in doing this? Are we investing in continuous improvement in this service area? Is it a long-term differentiator, and what's the state of the commercial market?" You look at those criteria and challenge yourself about what businesses you should be in from a support perspective.

What did you find? That journey has allowed us to make a number of strategic decisions around partnership. I probably have 16 to 18 major service partnerships [see chart, page 49]. Some of the older deals were probably some of the most painful lessons we had, but the good news is we're smarter now. We've matured. And I think it represents long-term transformation around service delivery for Merrill.

What are you looking for in these relationships? We'd like to have a more variable cost base in our organization. We want to constantly reduce the unit cost of service delivery, and we want to deliver acceptable service at the right price.

What are some of the things you've learned? Some of this stuff is classic score-carding: clearly understood service-level agreements, carrot-and-stick elements of financial rewards related to important metrics. The other things we've learned are the importance of benchmarking your relationships in terms of value delivery. There are other metrics related to total cost of service delivery, [such as] service expense as a percentage of revenue, to be sure that you're responding to top-line pressures as well. And you have to have the right variability of your cost base to deal with cyclicality of your industry.

Are there any subjective measures? We

Continued on page 49

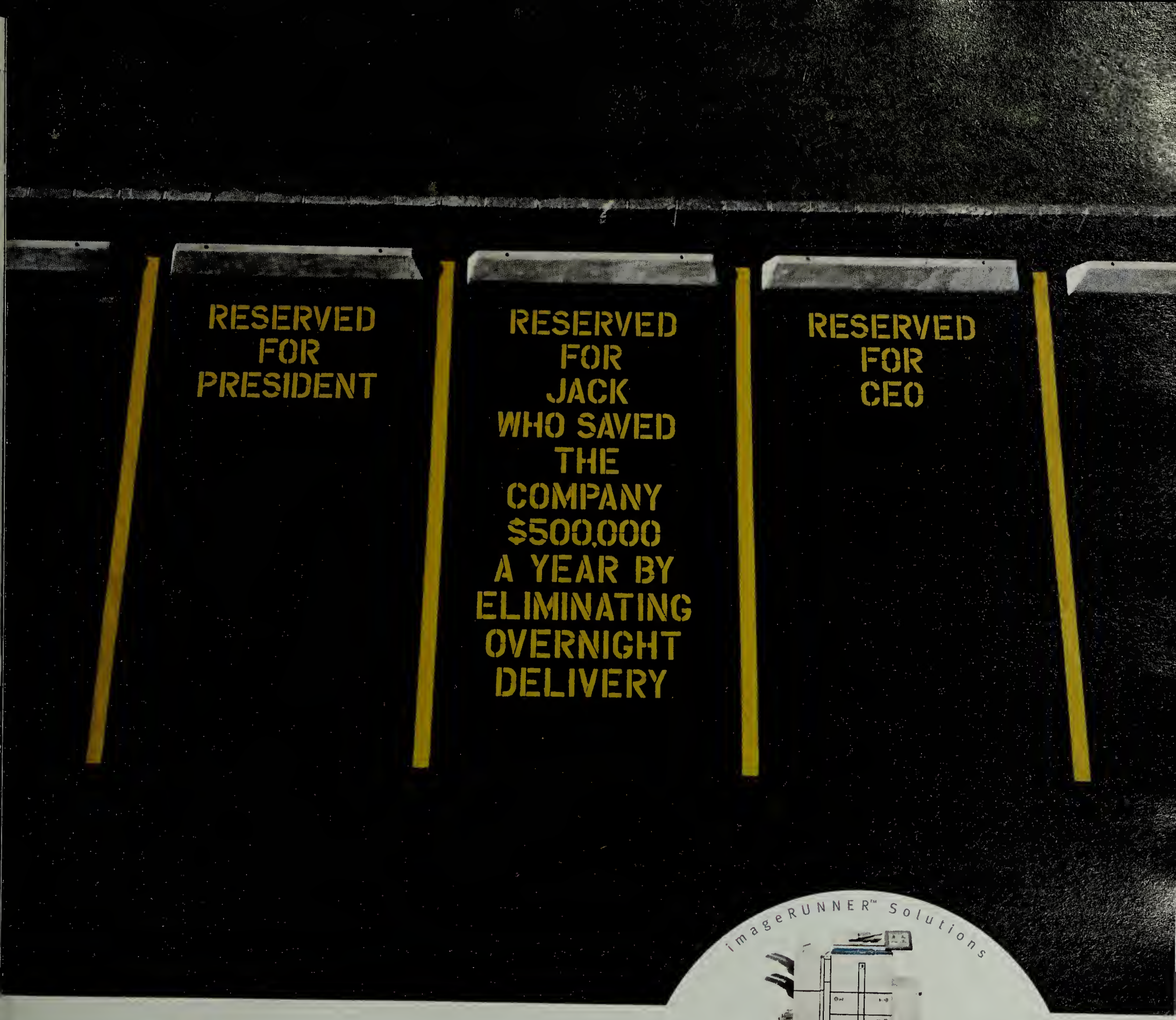
JOHN McKINLEY

Title: CIO at Merrill Lynch & Co.

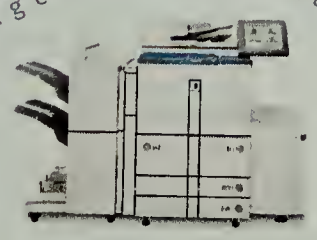
Age: 44

Goals: To have a more variable cost base, reduce the unit cost of IT service delivery and deliver acceptable service at the right price.

www.merrilllynch.com



imageRUNNER™ Solutions



imageANYWARE™ The downside: your walk through the parking lot was long. The upside: it gave you time to think about a way to eliminate the high cost and hassles of overnight delivery.

And lo and behold, you found it: Canon imageRUNNER™ technology. It lets you send documents anywhere, in any form, at any time, over your network or the Internet. Instantaneously. Just scan a document into the imageRUNNER and send it—to desktops, E-mail addresses, fax machines, databases and file servers. All of which results in lowered costs and increased productivity. So, take pride. Thanks to Canon know-how, your walk through the parking lot is considerably shorter. 1-866-25-CANON www.imagerunner.com

Canon is a registered trademark and IMAGERUNNER and Canon Know How are trademarks of Canon Inc. IMAGEANYWARE is a service mark of Canon U.S.A., Inc. ©2002 Canon U.S.A., Inc.

Canon KNOW HOW™

The Online Storage Networking Magazine for IT Leaders

SNWOnline.com is the leading source of storage networking industry features, trends, analysis and user research from expert writers and analysts.

SNWOnline.com offers comprehensive reporting and feature stories, with a focus on IT Leaders who seek education and practical advice on the deployment of storage networking solutions.

PRODUCED BY
COMPUTERWORLD
CUSTOM PUBLISHING

ENDORSED BY
SNIA

www.snwonline.com/300

Continued from page 46

have softer measures around categories like partnership and innovation. When you're dealing with top-tier technology providers, you want to ride the innovation wave and the R&D investments that they're doing. The next layer is more granular feedback at the key executive level.

How does that work? The goal is to be able to sit down with an account executive and say, "Here are the senior people that face off to us from you. Here's how they are perceived on a trended basis." Is the level of trust and the perception of service going up, or is it going down? That's important, because it's the key individuals that make a partnership work. I think it will work to the vendor's benefit as well, because they will know the people that resonate with us and the people that don't. And in a multiyear partnership, it's critical to stay on top of that.

What are some of the other things that you have to get right? One is, you can't outsource a problem. If you go back and diagnose where partnerships have failed, it's when somebody has taken their mess and viewed outsourcing as abdication of ownership. That's always been a failure. That's meant that we have to hold ourselves up from a rigor perspective to higher standards.

What have you done? You have to make the right type of investments on your side on methods and processes and ensure that you're not holding the vendor accountable to the platinum standard, while you're operating to the bronze.

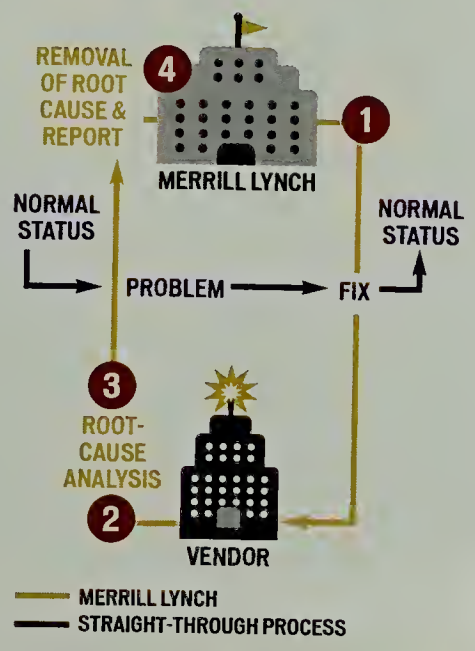
Give me an example. It's been straightforward things, like the implementation of MSF [Microsoft Solutions Framework] as our application development methodology. And then on the operations side, we've used their operations framework, MOF. And that's helped us internally to get more consistency of terminology, roles, processes, but the second benefit of that is that we're easier to do business with. With my offshore partners, poorly structured projects never work. But when we have structure, we get good yield in terms of project success rate, and we're also able to tap into that lower-cost labor pool.

How do you deal with service problems? Our ultimate tenet is it's not closed until the root-cause analysis is done. It's not sufficient for a vendor to say, "You had a problem yesterday; it's fixed." That won't be closed from our perspective until [the vendor] has gone back and understood and articulated to us what the root cause that led to that incident was and what they are doing to address the root cause.

How do vendors feel about that? That discipline has been painful at times. We've had some push back early on because they say, "Just manage us to a service-level agreement. Treat it like a black box; you can't look inside." But we don't believe that's the way a partnership works.

IT Problem Resolution At Merrill Lynch

In a traditional straight-through process (which reads left to right and in blue in the diagram), the vendor fixes a problem and the status returns to normal. Merrill Lynch reports a problem **(1)** and then requires that the vendor analyze the root cause of the problem **(2)**, address it **(3)** and report back **(4)**. Only then is the incident closed, and the status returns to normal.



How have you actually been developing IT managers within this new framework? It's been a variety of things: consistent exposure to best practices, using strategic negotiations for large outsourcing deals as a talent development opportunity for emerging players, bringing in external best practices from the academic and vendor communities and from people who have been down this path or are going down the path in parallel. It's also the multiyear commitments we've made to consistent process within the organization. Finally, it's working with our peers on [Wall] Street to share things that we think aren't necessarily proprietary secrets where we can all benefit.

When you establish a relationship and some IT manager is going to manage it, where does that person typically come from? Normally they're a seasoned veteran, so they bring with them a fair amount of diverse experiences. They have been in varying roles that have given them day-to-day interaction with external providers. It might have been a partnership with a commercial software company to implement a CRM solution or whatever. But they have a bit of muscle memory that we can leverage.

Some of the best we have are also very good from a sourcing perspective. They've been involved in strategic negotiations on large deals in the organization, so they understand the rigor and the depth you need to have with relationship management to make a viable long-term partnership work. Sometimes we give it to our high potentials, because it's a great development opportunity.

Sink or swim. Yes. But it gives them a great exposure to what I think is implicitly an absolutely critical competency for our profession.

What has been the hardest part of this challenge? Transitioning our current base of suppliers and getting them to embrace the practices and not assuming a defensive posture when we're trying to implement some of this. It's tough, because we're a tough client as is, and now we're talking about even more. [They wonder if] we're asking them as vendors to give us more ammo to come in and abuse them the next time we get together. They worry, but when you get them through that moment and you're six months into this, I think they understand and appreciate some of the value they get.

What is the value for the vendors? There's absolutely nothing worse for a vendor than to bring in their national manager to talk about the state of the union and get the surprise of their life when they hear the litany of woes about all the things they're not doing. Here, there are no surprises, and I think that benefits them. And problems don't age when you have an infrastructure like this. Aged problems are when ill will and reputational risk come into play. The nice part here is it allows them to understand the hot spots in the relationship at any point so they can get on top of them on a timely basis.

Selected Partners In Merrill Lynch's Virtual Organization

AT&T Corp. Domestic wide-area network

Cable & Wireless PLC Web hosting

The Bank of New York Co. Back-office systems for Merrill Lynch investment managers

Bloomberg LP Debt-trading systems

Multex.com Inc. Research distribution

Barra Inc. Risk analytics

Unisys Corp. European desktops

IBM U.S. desktops

Pershing U.K. clearing services for international private client group

Storage Networks Inc. Storage

State Street Corp. Merrill Lynch investment managers' middle office and fund accounting

Yahoo Inc. Digital media hosting and distribution

In India, for application development, maintenance and infrastructure:

- **Tata Consultancy Services**
- **SSI Technologies**
- **Covansys Corp.**
- **Satyam Computer Services Ltd.**

You've been talking a lot about metrics. What kinds of results are you seeing from having these processes in place? The most important one is that we are actually achieving the savings that we forecast with the partnerships, and we're doing it within acceptable boundaries of quality of service. Ultimately, that's success.

What have you learned? The idea of embracing all these partnerships is a no-regret decision. Had I deluded myself and thought that all these areas were core competencies and kept all that capacity internally, I would have had much less capacity to do things that have had true strategic value in the eyes of our business partners. ◗

Melymuka is a Computerworld *contributing writer. Contact her at kmelymuka@earthlink.net.*

CUSTOMER
WANTS IT
DESPERATELY

OPEN INFRASTRUCTURE
INTEGRATION
PLAY

1] When the CEO wants it network-ready, you need to deliver. And fast. With an end-to-end open e-business infrastructure, you can respond instantly, integrate smoothly and deploy quickly.

2] IBM is leading the open charge across the entire world of infrastructure – from Linux®-enabled hardware and software, to Java™ and XML-based Web solutions, through to IBM integration experts. Integration. It's how winners win.

3] For more Winning Plays, visit **ibm.com**/e-business

e business is the game. Play to win.™

CEO
NEEDS IT
URGENTLY

CIO
DELIVERS IT
INSTANTLY

IBM

To truly merge technology and business objectives, companies are cross-training workers to the point where it's not always easy to tell their sales reps from their IT pros.

By Melissa Solomon

AT THE START OF EACH SEMESTER, Harvard Business School professor Rob Austin draws two circles on the blackboard. He labels one "business," and the other "IT." With his chalk, he directs his students' attention to the spot in the center where the two intersect.

"If you can live in that space, you will have a job forever," says Austin, who teaches technology and operations and is a consultant at Arlington, Mass.-based Cutter Consortium.

It has almost developed into a mantra within companies during the past several years: For technology to be effective, IT workers need to understand the business objectives. But while many managers look for business know-how when hiring IT workers, there is still only a minority of companies that have well-developed training programs in place to hone workers' skills on both sides of the fence.

W.W. Grainger Inc., a $4.8 billion distributor of business maintenance products in Lake Forest, Ill., has created a cross-discipline movement designed to get IT workers thinking strategically about the various parts of the business.

"One thing is for sure: Cross-training will get you out of your comfort zone," says Tim Ferrarell, senior vice president of enterprise systems. Since joining Grainger 20 years ago, Ferrarell has moved from positions in product management and marketing to business planning and on to his current role in IT. Moving into new roles has forced him to face and conquer the unknown, Ferrarell says. But it can be

MARC BERLOW

TIM FERRARELL, senior vice president of enterprise systems at W.W. Grainger, says, "One thing is for sure: Cross-training will get you out of your comfort zone."

Trading P

difficult to effectively lead a team that knows you're a rookie who's just learning the ropes in your latest role.

One lesson learned: "Get comfortable with saying, 'I don't know but will find out,' " Ferrarell advises. "The old saying 'Fake it till you make it' doesn't work, particularly with the technical team."

With the goal of infusing IT and non-IT managers with the ability to think strategically and understand how each aspect of the business affects all the other parts, Grainger regularly moves managers across disciplines — from marketing to IT, from field office work to corporate office work, from regional sales offices to distribution centers — as a sort of training-under-fire program.

Individual Paths

Each Grainger employee has a customized professional development plan, and they're assigned new roles to gain the skills they need. The length of time in each role varies, depending on the specific skills and experience the worker needs to attain. After completing a stint in a particular department, some workers return to their original jobs, while others may go to yet another department.

To learn how technology can further Grainger's business objectives, Ferrarell shifted from an executive role in marketing to his current one in IT. On the flip side, the vice president who previously ran the IT department at Grainger is now the company's executive vice president of marketing and sales.

To supplement the on-the-job training, Grainger has an in-house program supplemented by consulting services from the Colorado Springs-based Center for Creative Leadership. Together, the two programs offer all employees some lessons about specific pieces of the business — something training experts say is rare. For example, the training center offers workers from all areas of the company courses on topics ranging from supply chains to customer service to marketing. It also has an in-house executive education program based on Grainger's strategy.

"I'd say it's invaluable," Ferrarell says of Grainger's cross-training culture. He says he's always appreciated the company's strategy, but since moving to IT earlier this year, he better understands how to put that strategy into operation. For instance, he has spent much of the past year learning about how to get the most out of Grainger's SAP enterprise resource planning system to make the business run more efficiently.

"Oftentimes, people confuse training with expertise," he says.

At Northfield, Ill.-based Kraft Foods Inc., cross-training is very much an out-of-classroom experience. "Conferences and classes and reading books will never make you an expert on anything," says Margaret Schweer, director of human resources for information systems at Kraft Foods. "Some of the most powerful learning you're going to have is in the context of the job."

She cites some of Kraft's homegrown leaders as examples. Mark Johnson came to Kraft with a bachelor's degree in information systems but spent 10 years selling Kraft products. About two years ago, he took an application development job, and he's now director of information systems for sales.

"We have a lot of those examples," says Schweer. "That's not unusual for us."

She says that Kraft, like Grainger, thinks in terms of enhancing employees' capabilities across a broad range of functional business areas so they can move from job to job or department to department based on their needs and the needs of the company. Kraft has a yearlong leadership program that teaches prospective IT managers accounting, basic finance and industry-specific facts. It also teams participants with mentors who teach them about the business and listen to their views from a technology perspective.

"It's hard to have a truly articulate conversation about technology if you don't understand the business," says Schweer.

That's the "last mile" of software development: tying technology directly to business objectives, says Buzz Morley, e-business project manager at Cole Haan, a Yarmouth, Maine-based shoe and apparel maker. To do that, it's not just IT workers who need to learn about the business. Often, business workers don't understand even basic spreadsheet concepts, so they have trouble using the available technology to meet their business goals, says Morley.

If they don't grasp the complexity of technology, business managers can doom projects by ignoring or fast-forwarding past important technological issues that could create problems later or minimize the benefits of a project, says Harvard's Austin. For example, since the advent of Web architecture, systems have grown increasingly complex. There are so many new components in networks that there are more opportunities to gain efficiencies.

But Austin says there are also more risks that something will go wrong. Business managers who think "you kick butt to make a project work" rather than addressing the technology complexities as they arise can hurt a project, he says, because they can only sweep the problems under the rug for so long.

But it's often easier to teach IT workers business skills than it is to teach nontechnical people technology, says Austin.

"There's less of an eye-glazing effect," he says. ▶

Solomon is a freelance writer in New York. Contact her at melsolo70@hotmail.com.

PUTTING THE PIECES TOGETHER

Training for IT workers at Kaiser Permanente goes beyond bits and bytes:

QuickLink 33083
www.computerworld.com

The Big Picture

A March 2002 poll by online publication *Gallup Management Journal* found that only 31% of workers are actually engaged in their jobs and directly contributing to the goals of the company. The study analyzed psychometric, attitudinal and financial data across more than 10,885 business units in 51 organizations in 23 industries.

So, how do you get the other 69% engaged? IT managers and learning experts say the key is to give workers big-picture goals. Rather than have them complete a set of tasks, put them on a team charged with fulfilling a major goal, such as launching a new product or creating new customer service channels. Then give them the means – through conferences, workshops, internal training and mentoring programs – to acquire the skills they need to meet those goals.

POLL

"It's like throwing puzzle pieces at people without ever showing them the full puzzle," says Rich Berens, executive vice president of client services at Maumee, Ohio-based Root Learning Inc. and a former director of the company's technology service. If you give employees the big picture, they'll come to their own conclusions, he says. "People will tolerate your conclusions, but they act on their own."

Project-based training provides motivation and turns learning into a priority for workers, says Harvard Business School professor Rob Austin. IT workers in a finance seminar might question why they're learning about credits and debits, but if it's applied in the context of the $50 billion enterprise resource planning implementation being launched the following month, it takes on new meaning, says Austin. The benefits of such on-the-job cross-training via cross-functional projects can be tremendous. When you're at a project meeting and you can't tell who's in sales and who's in IT, you know that your cross-training objectives have been met, he says.

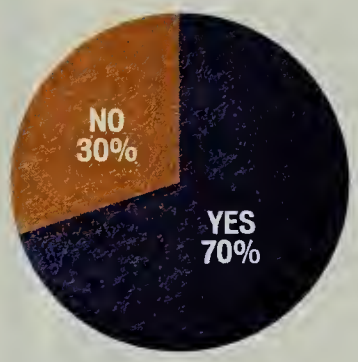
– Melissa Solomon

laces

BRIEFS

Direct Report: CIOs Go to the Top

Does the CIO report to the CEO?



BASE: 99 COMPANIES

SOURCE: CUTTER CONSORTIUM, ARLINGTON, MASS., SEPTEMBER 2002

U.K. to Toughen Privacy Laws

The U.K.'s Data Protection Commission last week warned that it intends to step up enforcement of the Data Protection Act of 1998 and take a proactive stance toward investigating business compliance with privacy rules. Enforcement of the law has been spotty thus far, and the commission said it anticipates that its aggressive stance will lead to more sanctions against companies that aren't in compliance. The commission has set up an enforcement board to lead the effort.

U.S. companies operating in Europe face stringent privacy requirements that limit the sharing of customer data.

New CMM Due for Release Next Year

Software experts at Carnegie Mellon University are working on an updated version of the Capability Maturity Model (CMM), a widely used guide for improving software development and management processes. The updated model will be geared toward corporate IT organizations and commercial software developers, said Jeff Perdue, the head of the project at the Pittsburgh-based university. He said the update team is seeking input on the revised model. For more information, go to *www.isri.cmu.edu/~sw-cmm.*

JOHN BERRY

Calculating Change Upfront

THERE'S NO DOUBT that Wal-Mart is an economic powerhouse. Many trading partners have felt the jackboot of the retailer's pricing proposition. The spirit of its stance is this: "Here's the price we'll pay for your product. You figure out how to make it profitably, or we'll find someone else who can." It could be called change management by ultimatum.

As successful as Wal-Mart has been in wringing out operational inefficiencies in its suppliers — and dealing with the economy — enlightened managers know that changing business processes and people pivots more on the art of diplomacy and persuasion than on coercion. It isn't in a manager's long-term interest to bully employees into accepting change without preparing them for it.

JOHN BERRY is an IT management consultant and analyst in Bend, Ore. He's currently writing a book about the measurement of intangible assets. Contact him at **vision@according2jh.com.**

Yet too often the operational and strategic change brought about by software investment is overlooked in the business case. This is a dangerous oversight, considering that many kinds of enterprise applications re-engineer business processes, reorder workflows and create new job functions and eliminate others.

Before managers can embark on a change management exercise, they must not only identify where in the organization change will occur, but also anticipate how the change will impact employee job responsibilities. As it happens, the metrics constructed in an economic assessment value model, if accurate, will reveal these phenomena. Once a preliminary economic model is built, managers can get underneath the metrics to think hard about the nature of the change that needs to happen for those benefits to materialize. Ignoring this exercise guarantees dashed expectations around the economic returns of a software investment.

Back to retail. Let's assume that a manufacturer wants to invest in a comprehensive suite of supply chain modules to work collaboratively with its trading partners in order to eliminate supply chain inefficiencies. Here are some of the metrics that grow out of an economic value model, and the change they reflect:

- A manufacturer can dramatically reduce its held finished goods inventory in a collaborative supply chain environment. What's the assumed change? Retailers have to extend their short-order cycles to better align with longer manufacturing cycles. Are they prepared to do this if it means carrying more items for a somewhat longer period of time?
- Working capital efficiency can improve if the manufacturer can better manage its raw material inventories. The assumed change is that the retailers share proprietary information about customer behavior with the manufacturer at the point of sale, since coordinated supply chain value derives fundamentally from a universal view of customers. Given this, the manufacturer and retailers must also build in organizationally collaborative processes to plan for future customer demand. This is called trust and cooperation.
- The economic model also reveals a host of other metrics-based benefits: better asset utilization because of tight collaboration with retailers, a reduction in the incidence of out-of-stock items, and increased revenue due to retailers' smarter merchandising and planning of promotional events through their deployment of supply chain applications. The assumed change? One is that your manufacturing rep, retained to earn commission on sales to this particular retailer, is loving all this.

Most reps are independent contractors who sell a range of complementary items to retailers from different manufacturers. But life may be very different after an IT-enabled scenario in which manufacturer and retailer are joined at the cash register. In the rare case where a large manufacturer employs reps, how can it deploy their knowledge and skills to other activities when at least some of their job functions have been automated? On a basic level, a rep may spend far less time traveling to stores and talking up additional sales, and a lot more time sitting in front of the application trying to help retailers with a strategy for more sales to their customers.

These examples might represent a fraction of the change wrought by collaborative supply chain management. Whether any of these specific scenarios come to pass is less important than the idea that because change is inevitable, the economic model might be the best place to clarify thinking about the implications of the technology investment. Once you have completely articulated the nature and degree of change, you can adjust your economic model to reflect the risks, costs and time in preparing for this reality. You now have a fully loaded model to present to executives.

And if you hire a change management guru, hand him the economic model with all the metrics that whisper impending change and say, "Start here." He might find your preparation a welcome change.

WANT OUR OPINION?

For more columns and links to our archives, go to: **www.computerworld.com/opinions**

Meet William. Man on the move.

Man in the know.

And a customer engaged to stay a customer for life.

He anticipates his clients' every need. He expects the same. And that's just what happened when William's credit card company detected a suspicious charge. Since his cell phone is activated on the network, the bank could get to him immediately with a copy of the transaction. The charge was legit. Yep, he was spared the hassle of his card refused in front of clients at the clubhouse. At Nortel Networks,™ we call this "the engaged business model." And we make it possible by enabling business to engage their customers through delivering critical, time-sensitive information on whatever device they prefer. Before they even know they need it. So businesses can win the loyalty necessary to build a solid revenue base. Leveraging solutions like contact centers and application-aware switching. Insuring user mobility and network continuity. Accelerating productivity while lowering costs. The results: customers like William become customers for life. All delivered by our enterprise vision. One network. A world of choice. nortelnetworks.com/onenetwork

NORTEL NETWORKS™

nortelnetworks.com

Nortel Networks, the Nortel Networks logo and the Globemark are all trademarks of Nortel Networks. ©2002 Nortel Networks. All rights reserved.

IT Director-Atrica, a leading provider of Optical Ethernet solutions, is looking for qualified applicants for the position of IT Director. Will oversee the company's technical direction for product development, and direct development of internal IT infrastructure. Requires experience directing technical operations & systems development. Please forward resume to: Atrica, Inc., attn: Lynnette Fisher, 3255-3 Scott Blvd., Santa Clara, CA 95054; fax (408) 982-1921; or e-mail: jobs@atrica.com Visit our website at http://www.atrica.com EOE

SnapStream Media, Inc. is a leading developer of digital entertainment software and applications paving the way for the streamlined digital connection between networking technology and digital devices as well as PC's. Our company currently has openings for the following:

Systems Analysts: Analyze, design, develop, test, and implement computer applications for digital media using XML, C++, SOAP, and DirectX. Create, edit, and enhance test applications using Windows Programming, Windows Applications Programmer Interface, VB Scripting, and Windows Media Software Development Kit. Candidate will be responsible for implementing release build procedures throughout the life cycle and compose final production releases using Wise for Windows Installer and Microsoft ORCA database tool. Perform user acceptance testing, regression, and functional testing using Empirix E-tester. Requires a Bachelor's in Computer Science or a related field and 1 year of experience.

Send resume to: ATTN: Mr. Rakesh Agrawal, C.E.O., Snapstream Media, Inc., 6730 Long Drive, Houston, TX. 77087 or via email at: recruit@snapstream.com

Desmac Corporation, is an IT and computer software firm specializing in data driven business applications including, Internet, Intranet, client-server, sales force automation, and E-commerce applications. Our company currently has openings for the following:

Programmer Analysts: Plan, test and develop Internet based programs for ERP, customer relationship management, sales force automation, and E-commerce using SOAP and XML-remote procedure call. Design and develop applications using .Net, Visual Studio, Advanced Revelation, Java, and Flash on Oracle and SQL Server databases. Interact with clients to design the functions of software according to client specifications. Requires Bachelor's degree in Engineering or a related field and 2 years of experience.

Send Resume to: ATTN: Mr. Yaron Pacht, President, Desmac Corporation, 1605 S. Parkway, Suite 105, Sugar Land, TX 77478 or via e-mail at: hrjobs @desmac.com

Computer Systems Analyst - Des Moines, Iowa: Design, Develop and Implement the next generation IP platforms using tools and software such as Java, C, C++with back end Oracle, SQL, Sybase databases to implement the next generation IP platforms suchas Unix, windows to provide an integrated management system. Bach Degree in Comp. Science, Math or Engg w/2 yrs of exp. in job offered or as Programmer Analyst/Systems Analyst reqd. M-F; 9.30AM-6PM. $76000/yr. Send two resumes to: #Job Order Number 1101619, Iowa Workforce Center, 215 Watson Powell, Jr. Way. Des Moines, Iowa 50309-1727.

CyberSoft Technologies, Inc. is a rapidly growing computer business system and technology solutions provider specializing in Web-based solutions, web integration, databases, data warehousing, CRM, CTI, and knowledge management. Cybersoft currently has openings for the following:

Systems Analysts: To analyze, design, develop, implement, and test web applications using web design and interface tools Illustrator, Fireworks, and Cascading Style Sheets, as well as Active Server Pages, .NET, Oracle, Sybase, VC++, EJB, WebLogic, C Sharp, and Seagate Crystal Reports, UNIX and LINUX operating systems. Candidate must be able to use functional knowledge of web-based applications and database structure for application development and installation. Need Bachelor's degree in Computer Science or a related field. Need 2+ years of experience.

Send resume to: ATTN: Human Resources: Cybersoft Technologies, Inc., 4420 FM 1960 West, Suite #222, Houston, TX 77068-3411 or via email: infomaster @cybersofttech.com

Senior Principal Engineer - CCBS; Dulles, Virginia: Provide technical customer support for US & international users of the five instances of the Customer Care & Billing System (CCBS) & its interfaces to the relevant mediation devices & switches. Analyze & determine which system, database, business process or interface has caused the problem & provide solutions. Create scripts to fix or monitor the databases. Provide guidance & recommendations regarding business practice modifications. Work with switch & mediation device engineers & technical users worldwide to test & implement CCBS. Apply knowledge of Oracle and UNIX systems, GUI, switch & mediation device databases & all of the business processes of the billing, invoicing and provisioning systems. Bachelor's degree or equivalent in Electrical Engineering or a closely related field.& 6 yrs exp. in the position offered or in a systems engineering position two yrs of which must have been in the telecommunications industry. 6 yrs exp. must include at least two yrs exp with switch protocols, mediation devices, oracle databases, telecom products & billing systems & billing product development. 40 hrs per wk, domestic & int'l travel required (25%). Send resume to Carrie Carr-Main, ORBCOMM, 21700, Atlantic Boulevard, Dulles, VA 20166

Software Engineer Needed to develop middle-ware components for real-time management and testing of various network devices utilizing a common platform to manage CDMA, TDMA, GSM and other environments. MS in C. Science or related field & programming experience in Java, XML, CORBA, Visibroker required. Send resumes /salary history to: Alexander Gavrilov, SoftTrend, Inc., 6160 N. Cicero, Suite 124, Chicago, IL 60646.

Chief Computer Programmer: Plan, develop, program, test & document computer programs using structured analysis; analyze & write detailed program specifications; design & deploy systems using Sterling's COOL: GEN, Oracle 9iAS, Oracle Designer 6i, & Oracle Developer 6i. Req. BS in CS or related or foreign equiv degree plus 4 yr work exp. Hrs: 8a-5p, M-F. Send resume to Moorecroft Systems 202 Abbey Ct., Alpharetta, GA 30004 Ref ST.

PROGRAMMER ANALYST
To work in various unanticipated locations throughout the U.S. Duties: Analyze, develop, test and document computer programs including business applications and network communication programs. Evaluate user requests and software program requirements for new and modified programs. Write specifications, code, test and debug computer programs. Use of Oracle, Oracle Database, Developer 2000, HTML, TOAD and Windows NT. Bachelor's degree in Computer Science, Computer Applications or Mathematics, plus 1 year in the job offered or 1 year in a related occupation including Systems Analyst or Programmer. 40 Hrs/wk, 9AM-6PM, $51,910.00/yr. Must have proof of legal authority to work in the United States. Send your resume to Iowa Workforce Center, 902 W. Kimberly Road, Suite 51, Davenport, IA 51806-5783. Please refer to Job Order IA1101624. Employer paid advertisement.

E Computer Technologies, Inc., is a computer and technology solutions provider of business-to-business and E-commerce application implementation and integration services specializing in E-purchasing systems. Our company currently has openings for the following:

Programmer Analyst: Analyze, design, develop, test, and implement B2B, Enterprise Resource Planning, and Customer Relationship Management technologies and applications using Oracle on UNIX, and IBM mainframe with Customer Information Control System, Job Control Language, COBOL II, SQL, and DB2 database on Multiple Virtual Storage /Enterprise System Architecture. Conduct requirements analysis and perform unit, functional, integration and system testing of the converted applications. Interact with clients to design the functions of software according to client specifications. Need Bachelor's degree in Computers, Engineering, or related field and 2 years of experience.

Send Resume to: Mr. Ravi Kumar Gadde, Sr. Systems Analyst, E Computer Technologies, Inc., 777 S. Central Expressway, Ste #4-F, Richardson, TX or via e-mail at: jobs@ecomputertech.com

MindTree Consulting, an expanding IT consulting company offering product realization services to Internet infrastructure and device vendors, is searching for qualified IT professionals to join its growing team. Presently, we have positions for Network Administrators and Software Consultants. Experience with Cisco Router, Compaq servers, Implemented Checkpoint network security firewalls, Rational Rose, iPlanet Webserver, Sun Microsystem's J2EE architecture desired. Qualified applicants will have a bachelor's degree in a relevant field and qualifying industry experience. Positions may require relocation to various client sites throughout the United States. Oualified applicants submit resumes to HR Department, The Tower at 270 Davidson Avenue, Suite 305, Somerset, NJ 08873.

Lead BW Analyst - Prov tech suppt for Data Warehouse initiatives using SAP's BW s/w. Analyze, design, develop, implement & suppt SAP R/3 & BW Rptg solutions using SAP BW database designs, data modeling, relational databases, OLAP, SQL & visual development environments. Bach's deg in Comp Sci, Physics or Engrg reqd + 4 yrs exp in job. Fax resumes to: 201-825-7567.

Tekstrategy Inc. is a leading information technology and software development firm delivering customized technology products and services to businesses worldwide. We are presently looking for the following:

Software Engineers: To design, develop, maintain and implement product design and manufacturing applications using Oracle Developer, Peoplecode, SQR, and C++ on UNIX and Windows Operating Systems. Develop, test, and maintain interfaces between Oracle and legacy systems using Triggers, data administration operation tools, object security, reporting tools used for Oracle Financials, and tree manager Peoplesoft query. Need Bachelor's in Computer Science or Engineering. Need 4 years of experience.

Send resume to: Venkat Iyer, Tekstrategy Inc., 5024 Nautica Lake Circle, Green Acres, FL 33463, or via e-mail: viyer@tekstrategy.com

Strongsville Software Co. needs Project Engineer to be responsible for assisting in the adaptation /modification of state of the art machine control software packages for company's requirements; assist in the designing, adaptation, modification, testing, implementation, installation, and service of equipment and software in customer's facilities, under the supervision of the engineer; assist in providing customer support for PC hardware and software, interoffice training and customer training on software developed by the company, under the supervision of the engineer. Bachelor's Degree in Applied Mathematics (or equiv) and min. 3 months in-job/job related exp is required. Exp must include work with RSLINX, RSVIEW, RSLOGIX, Autocad, Miorostation, MS Access, MS Excel, and MS Word. Resumes to: e-JobAds, 27113 Brookpark Rd. Ext. #127, North Olmsted, OH 44070.

Applications Programmer Lead - Responsible for developing or modifying procedures required to solve complex problems taking into consideration computer equipment and capacity and limitation, operating time and form of desired results. Will be responsible for program design, coding, testing, debugging and documentation. Required: Bachelor's Degree or foreign degree equivalent in Computer Science, Information Systems, Engineering or related field and five years' related experience required or Master's degree or foreign degree equivalent in one of the stated fields and three years' relevant experience. Experience must include Java language skills to include J2EE; Struts; C++ and PI/SQL. 40+ hours per week, Monday through Friday, 8:00 a.m. to 5:00 p.m. Send resume to Attn: David Godbee, BellSouth Advertising & Publishing Corporation, 2247 Northlake Parkway, Mailstop: 06C 617, Tucker, Georgia 30084.

Infogen is seeking IT professionals. Req. BS. Skills in following area are plus: Oracle9i, Weblogic / WebSphere, C++, Visual C++, VB, COM, STL, MTS, MSMQ, ASP, Java, HTML, XML, MTS, MSMQ, ADO, UML. Travel is required. Send resume to infojobs@infogeninc.com.

KBTS Tech is looking for System/Quality Analysts. Install and configure Sun Solaris 8/2.6 on Sun E3500, E450 Enterprise Servers & Sparc workstations. Also configure I/O devices (Ethernet, SCSI and tape drives) and other peripherals. Minimum BS. Apply at info@kbtstech.com. EOE

SYSTEMS ANALYST Analyzes user requirements, procedures and problems to automate processing or to improve existing computer systems.
Must be able to travel extensively. Bachelor of Science, Engineering or Math related 2yrs experience in job offered.Included in the 2 yrs job experience in Oracle Financials 11i, HR/payroll 11i, on GL, AR, AP, CE, OAB, AOL and HR/Payroll modules, FSG, Oracle Fast Formulas, SQL* Loader scripts, Unix scripting for batch jobs and CRON jobs, Pro*C including front-end development using Oracle Reports 6i and Oracle Discoverer 4i, Designer 2000, API's with PL/SOL web tool kit.

Apply by resume to Human Resources Department, Capricorn Systems Inc., 3569 Habersham at Northlake, Bldg K, Tucker GA 30084.

Seeking qualified applicants for the following position in Memphis, TN: Technical Advisors. Provide technical advice and expertise to systems development project groups in defining, developing and reviewing existing, as well as proposed, applications for major computer systems. Requirements: Bachelor's degree* in computer science, math, MIS or related field plus 7 years of experience in systems/applications development, including programming. Experience with Visual Basic, SQL Server, and Server hardware also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Chris Gibney, Federal Express Corporation, 2600 Nonconnah Blvd., Suite 191, Memphis, TN 38132. EOE M/F/D/V.

SW Eng: Design Windows and Unix applications for streaming video and video conferencing products over Ethernet and ATM networks using C, C++, and html. Create and apply DirectX /DirectShow filters. Create players to allow user to set preferences, convert streams to different formats w. Windows media format SDK. Design interfaces with COM. Apply re Ad #4 to B. Meehan, VbrickSystems Inc., 12 Beaumont Rd., Wallingford, CT 06492, email: bridgetm@vbrick.com

Network Administrator wanted to install, configure, and support offices' local area network and wide area network. Manage hubs/routers and servers, install hardware and software and perform related duties. BS in Computer Science and two years related experience required. Send resume to HR, The Crossroads Center, P.O. Box 19723, Cincinnati, OH 45219.

Jr. Software Engineer to work under the direction of Sr. Software Engineers & assist in the design, analyses, development, coding, testing, optimizing, & implementing various applications for mobile devices using C, C++, SDS debugging, Icrane, ClearCase & DDTS for version control & defect tracking. Reqd: B.S. C.S. & 6 mos. of rel. exp. 40 hrs/week, 9am-5pm. Send resume to J. Brigham, HR #A27, 7301 Parkway Drive, Hanover, MD 21076.

Senior Infrastructure Engineer wanted by Fresh Direct, Inc. in Long Island City, NY. Duties include designing and implementing high performance, scalable, and robust E-Business infrastructure, defining standards of publication for web technology and manage all aspects of the implementation process, providing on-call technical supports. Master's degree in computer Science or related fields with at least two years experience is required. Please send resume to jobs@freshdirect.com

PROGRAMMER ANALYST

Design and develop methodology & counterparts to connect back-end legacy systems to frontend web browser based interface on CICS Mainframe & PC platforms using WebSphere, COBOL & Java. Conduct tests & provide ongoing support. Req: Bachelors in Comp. Sci., Comp. Eng., or Elec. Eng. and 2 yrs. exp. 40hr wk. Job/Interview Site: Westlake Village, CA. Send resume to Data Select Systems, Inc., 2829 Townsgate Rd., #300, Westlake Village, CA 91361.

Clines Software Consulting, Inc., an IT company is looking for qualified individuals for the following positions: Programmer/ Analyst, Software Engineer, Project Manager, Project Leader, Business Development Manager. Candidate must be willing to travel extensively. Send resume to: 716 N. Valley St., Suite A, Anaheim, CA 92801.

OPERATION RESEARCH ANALYST wanted by production, assembly and manufacture of personal computer company in Houston, TX. Must have Master in Operations Research or Mathematics and 1 yr. exp. in Manufacture ERP system. Respond to: HR Dept., Foxconn Corp., 8801 Fallbrook Dr., Houston, TX 77064. Attn: CKYM.

Trusted by more hiring managers than any IT space in the world.

IT careers.com

Project Manager (Denver, CO)-OneWorld Client Manager
Paradigm Technologies, a Petroleum Place Company, is an energy software company seeking a OneWorld Client Manager (Project Manager) to oversee the post-sales customization & implementation of accounting & financial software applications for the upstream oil & gas industry. This software integrates with JDE OneWorld financial software applications. Requirements include a Bachelor's degree or foreign equivalent in accounting or related field; 2 years of experience designing & developing financial software applications that must fully integrate with JDE OneWorld financial software applications for the upstream oil & gas industry. Respond with resume via surface mail only to: Human Resources, Petroleum Place/Paradigm Technologies, 1099 Eighteenth St. Ste.#2950, Denver, CO 80202, referring to #PT9.02 OneWorld. We are an equal opportunity employer.

Reg. Project Mgr., Littleton, CO: Apply management principles to develop & implement info. systems projects, incl. project est., plan, recruitment, monitoring. Identify risks/solutions, bus. analysis & dev.; prep. reports, incl. mktg., sales, press releases, dev. user doc., training material, training class; dev. ad hoc systems/data manipulation, system specs., system plan, dev. test plan, using expert skills in MS Project, MS Access, MS Office. Req.: BS in Comp. Science or Business Mgmt. + ext. exp. in IT Mgmt. incl., typical systems dev. life cycles, budgeting, training & supervisory exp. Business analyst skills, knowledge of SOL & query cons. Ability to handle multiple projects simultaneously. Resume to: Judith Barbuto, Instructional Design Assoc. 10061 Talbert Ave., Suite 235, Fountain Valley, CA 92708.

Programmer: Develop basic applications for using JAVA and JDBC-ODBC to communicate with MS SOL database for inventory control and automation. Write programs to utilize LabView software for automated equipment testing. Maintain and test consistency of applications. Perform unit testing, monitoring, fine-tuning, troubleshooting and bug-fixing duties. Write specifications and documentation as requested within level of experience. Assist O.C. Dept. with automation and use of spectrum analyzer, noise figure meter, and network analyzer. Work within a multinational and multilingual work environment and interface with IT and Engineer personnel at vendors and OEM customers in North America and at manufacturers and suppliers in China and Taiwan. Req. BS in CS or CIS with 9 months experience in job offered or as programmer/analyst. Proficiency in JAVA, MS SOL, AutoCAD. $47,500.00 per year, 40 hr/wk, 8-5. Send resume to Dir. of HR, Pro Brand International, Inc., 1900 West Oak Circle, Marietta, GA 30062

Quantitative Programmer Analyst, Wachovia Corp., Old Greenwich, CT. Design & develop computer programs & systems for convertible bonds trading. Reqs. MA in Comp. Science or Eng. & 1 yr exp in financial industry developing trading systems for convertible bonds, quantitative modeling, value-at-risk calculations, new appl. dvlp., developing & converting specs. into code, & testing & prep. of code for prod. working in K or a similar special purpose language used for financial analytics. Graduate work or thesis incl. work w/ dvlp. & implementation of complex quantitative models is also reqd. Send resume & cvr. ltr. to Sabrina Miller, Wachovia Corp., 301 N. Tryon Street, NC 0953, Charlotte, NC 28288-0953. No phone calls please.

SYNAPSE GROUP, INC., a leading computerized magazine marketing company, is looking to hire qualified candidates for the following positions:
Software Engineer to research, analyze, formulate and help design software systems; to predict and measure outcome and consequences of design using scientific analysis and mathematical models; to help develop and direct software system testing procedures, programming and documentation; to help design and tune speech recognition interfaces for phone-based IVR sales and customer service systems. At minimum, a Bachelor's degree in Computer Information Systems required. Extensive knowledge in internet applications, HTML, SOL, ASP and ORACLE preferred.
Programmer Analyst to plan, develop, test, document and update computer programs to increase operating efficiency; to enter program codes into computer systems; to evaluate user requirements; and to monitor performance and provide technical assistance to program users. At minimum, a Bachelor's degree in Computer Science or it's equivalent required. Sound knowledge in internet applications, HTML, SOL, ASP and ORACLE preferred.
Business Analyst to research potential markets; analyze statistical data to forecast future marketing trends; initiate and produce timely and accurate reports/analysis to improve business results; and to develop and maintain sales and account management reporting systems. At minimum, a Bachelor's degree in Business, Finance or related discipline required. Strong PC skills and good financial/accounting background preferred. The company offers a competitive compensation/benefit package and an environment where achievements are recognized & professional growth is encouraged. Qualified applicants are encouraged to mail resumes to: HR Department, Synapse Group, Inc., Four High Ridge Park, Stamford, CT 06905.

FT Computer Services Manager. Multiple positions. Responsibilities include: Manage the development and implementation of marketing plans for NIIT's software products and services; manage strategic planning and budgeting; develop and negotiate proposals for the provision of software services; manage marketing analysts, systems analysts and other technical support personnel; and manage client relations. Must have a Master's Degree or foreign equivalent in Business Administration, Computer Science or related field and three years of experience as a Computer Systems Analyst, Marketing Analyst or a related occupation or a Bachelor's Degree or foreign equivalent in Business Administration, Computer Science or a related field and five years of progressive experience as a Computer Systems Analyst, Marketing Analyst or a related occupation for the computer software industry. Salary: $84,000 per year and up, commensurate with experience. If interested, submit resume in duplicate to: Ms. Sandy Pruitt NIIT (USA), Inc. 1050 Crown Pointe Parkway, Suite 500 Atlanta, GA 30338

SENIOR APPLICATION DEVELOPER to design, develop, analyze, implement and maintain web-based software applications using Java, JavaScript, ASP, Visual Basic, XML, SQL, MS SQL Server, SOAP and Rational Rose; integrate Microsoft web-enabled products with front-end systems and back-end systems. Require: M.S. in Computer Science/Mathematics/Information Systems and one year experience in the job offered. Competitive salary and benefits. Apply with resume to: Vice President, McKing Consulting Corp., 2900 Chamblee Tucker Road, Building 11, Atlanta, GA 30341 (Job# PY001).

The Principal Software Engineer /Developer will be responsible for multiple phases of small market payroll systems and software applications development projects, including but not limited to, analyzing project requirements; designing Oracle HRMS-based software applications with an emphasis on Oracle forms and reports; establishing and monitoring project plans; and acting as an expert technical resource across functional organizations. Will provide technical leadership and training to other team members, and will be responsible for directing and monitoring the productivity of subordinate professional team members. Will write code to produce software that meets company's exacting software development standards. Will also work with Quality Assurance organization to ensure that software components meet system acceptance criteria; participate in the transition of software to production, supporting the installation of new software components to the production systems; and create accompanying technical design documentation. Requires Bachelor's Degree or equivalent in Computer Science, Engineering, Mathematics, or Physics and five (5) years of experience in Job Offered or five (5) years of experience in Oracle client/server application development. Alternatively, will accept Master's Degree in Computer Science, Engineering, Mathematics, or Physics and three (3) years of experience in Job Offered or three (3) years of experience in Oracle client/server application development. Candidate must also possess demonstrated expertise developing APIs, Forms and Reports using Oracle ERP solutions; financials, manufacturing, or HRMS; demonstrtated expertise in UNIX shell scripting and SOL tuning using TKPROF; and demonstrated expertise developing front- and back-end applications, packages, functions, and procedures using SQL navigator, Oracle, PL/SOL and DEV 2000. Salary $75,000/yr; Mon-Fri, 9:00AM-5:00PM. Submit two (2) copies of resume/letter of application to Job Order #2002-265, P.O. Box 989, Concord, NH 03302-0989. EOE. Applicants must be workers eligible to accept employment in the United States on a full-time basis.

Sr. Software Engineer wanted by optical networking system developer in Oceanport, N.J. Must have BS degree or equivalent in Electrical Engineering or related field and 8 years exp. in job offered or in Software Engineering or Design. Experience must include designing and programming embedded software using C/C++ VxWorks, developing communications software using Motorola PPC processors, and experience with high-speed optical control circuits. Respond to Doreen Sabol, HR Department (ref# 031), Tellium, Inc., 2 Crescent Place, Oceanport, NJ 07757.

Senior Programmer Analyst wanted to research, design, and develop computer software systems, applying principles and techniques of computer science, engineering, science, and mathematical analysis, using COBOL, CICS, MVS/ESA, and DB2. 40 hrs./week. 8am to 5pm. $ 67,766.40/year. Must possess Bachelor's Degree in Electrical /Electronics Engineering or Computer Science, one year of experience in the job offered or as a Software Engineer/Programmer, and six months experience with COBOL, CICS, MVS /ESA and DB2. Employer Paid Ad. Please send resumes to MCDC/ESA, P.O. Box 11170, Detroit, MI 48202-1170. Reference No. 202651.

13th Annual Conference & Career Expo

NSHMBA
NATIONAL SOCIETY OF HISPANIC MBAS

Things are heating up in Phoenix with the *13th Annual NSHMBA Conference & Career Expo* around the corner! With over 200 corporate sponsors, as well as, highly esteemed business executives from Fortune 500 companies, there is something for everyone!

With educational plenary sessions, dynamic seminars, and non-stop networking opportunities, the conference provides an excellent forum to enhance your leadership skills, network effectively and continue to make immeasurable differences in your career.

With all its splendors, Phoenix awaits the best and brightest Hispanic professionals to immerse themselves in the greatest Latin professional gathering on the planet — **don't miss out!**

PHOENIX

See You In Phoenix, Arizona November 7-9 **2002**

For more information please visit www.nshmba.org

NSHMBA
1303 Walnut Hill Lane
Suite 300
Irving, TX 75038
Phone: 214-596-9338
Fax: 214-596-9325
www.nshmba.org

Photos courtesy of Jessen Associates for the Phoenix Convention Center & Visitor's Bureau

BRAINSTORM GROUP & GIGA INFORMATION GROUP®

Present

Business integration℠
CONFERENCE SERIES

BPM/BPI
eAI/Legacy
Web Services
B2B

November 18-20

San Francisco

Nearshore & Offshore Outsourcing Conference Series

November 18-19

Co-Produced by

BrainStorm GROUP, INC.

GIGA
Giga Information Group®
Technology advice. Business results.

www.brainstorm-group.com

INFORMATION SYSTEMS MANAGER

Equal Opportunity Employer in Memphis area seeking Information Systems Manager. A successful candidate will be responsible for exercising managerial control over all information systems and assessing hardware /software needs and configurations; responsible for maintenance, development, and enhancement of existing tax collection systems; responsible for source code and continual maintenance and enhancement of website; design, develop, and implement new tax software; responsible for database management to ensure maximum performance; design standard and custom interfaces; prepare written documentation of software policies, standards, and methodologies, design systems flowcharts and logic diagrams; responsible for planning utilizing knowledge of business requirements and creative ability in conjunction with current technology; responsible for accurate storage, upload, and retrieval of online transactions; maintain and enhance Internet security to enable website to accept tax payment via the Internet; communicate technical and functional information to non-technical users. Design and transform user requirements into software applications; create short/long term information systems goals and ensure compliance with business plans.

The position requires a Masters degree in MIS, Computer Science, or related field plus at least 2 years experience as a software developer, programmer or engineer using SQL Server 7.0 or higher, extensive Crystal Report experience, Visual Basic 6.0; Visual Studio, including designing e-commerce sites and programming ASP pages, and must be proficient with Visual SourceSafe and Wise Installer or equivalent program. A candidate must also possess at least 3 years supervisory experience managing a programming staff. Must be able to utilize knowledge of above applications to perform responsibilities of position. Must be able to successfully demonstrate proficiency and skills during technical interview. Must be able to understand and respond to information and ideas presented by users (both verbally and in writing) and able to effectively communicate technical and functional information to non-technical personnel. Must possess ability to prioritize work while performing tasks on multiple projects. A candidate must be available to be on call and work non-traditional work hours. Must be able to pass criminal investigation, reference check and drug/alcohol screening. A successful candidate must reside in Shelby County, Tennessee as of the date of employment and remain a resident. The position is a full-time, salaried, exempt position and requires at least forty (40) hours a week. Send Resume to: P.O. Box 2751, Memphis, TN. 38101-2751

IT CAREER OPPORTUNITIES

CSC hes the following positions available in **Alabama, Delaware, Missouri, Massachusetts, New Jersey, Ohio, Oregon, and Virginia:**

- **Consultant**
- **Supply Chain Consultant**
- **Database Specialist**
- **ERP Product Specialist**
- **Computer Scientist**
- **Programmer Analyst**
- **Software Engineer**

Requires e BS or MS and relevant experience, besed on level of position. May involve working in multiple national work sites and public speaking.

We offer excellent compensation and e comprehensive benefits package. Please forwerd your resume to: **K. Hale, CSC, 2100 E. Grand Ave., El Segundo, CA 90245.** Please indicate the specific title and location of job for which you are applying on your application letter. EOE. M/F/D/V.

HTTP //CAREERS CSC.COM

CSC
CONSULTING • SYSTEMS INTEGRATION • OUTSOURCING

Piping Engineers needed: Seeking qualified candidates with MS/BS or equiv.&/or rel. work exp. Duties incl: Developing & optimizing power plant piping systems: performing static & dynamic stress analysis & providing technical solutions to piping issues at various sites. Part of the reqd. exp. must include 2 yrs. exp. with Mechanical Desktop, Caesar II & Licad. Mail res., ref. & sal. req. to: HRD, Fuel Cell Energy Inc., 11603 Seascape Run, Magnolia, TX 77354.

ENGINEERING
Engineering Manager/Software Architect. Requires Bachelor's degree (or foreign equivalent) in Computer Science or Electrical Engineering, & two years of exp. in the job offered or two years of exp. performing web development engineering. Stated or other exp. must include two years implementing back-end code for websites; programming with HTTP, HTML, & JavaScript technologies; & web server configuration & management. At least one year of exp. must incl. programming with PHP, XML, Flash, SSL, Java, customizing modules in Apache, & Linux. 40 hrs/wk. Job located in Mountain View, CA. Send resume to RocketCash LLC, c/o Les Cheong, 1890 N. Shoreline Blvd., Mountain View, CA 94043.

V GROUP INC.
Software & consulting company seeks qualified professionals (Bachelor's degree +) for nationwide positions
Programmer / System Analyst
Web Developers (Java, coldfusion, ASP)
Web Masters
ERP/CRM Professionals (Siebel, SAP, BaaN)
Tools (Actuate, Crystal Reports)
Client Server (Oracle, C, C++, VC++, VB)
System Administrators (Solaris, HP-UX, AIX, Windows NT, Cisco)
Database Administrators (Oracle Apps, Peoplesoft, Sybase, Oracle, DB2)
Salary: $90,000 - $110,000 PA
Benefits available
Send resume to:
V Group Inc
#1859
3700 S West Port Avenue
Sioux Falls, SD 57106-6344

ENGINEERING
Senior Software Engineer. Requires a bachelor's degree or equivalent foreign education in information technology or computer science and one year of experience in the job offered or one year of experience engaging in the development, implementation, and administration of an ONYX CRM applications. All experience must include installing and customizing ONYX SQL Server stored procedures, triggers and views; creating new programs and codes using advanced SQL programming; engaging in web-based programming using HTML/XHTML, and XML; and expanding functionality of ONYX CRM applications using VisualBasic. 40 hrs./wk. 8:00 a.m. - 5:00 p.m. Apply with resume to Mr. Peter Borocz, Chief Information Officer, Fisher Investments, Inc., 13100 Skyline Blvd., Woodside, CA 94062.

Management Information Center Specialist: Position is located in Miami, FL. The applicant must have a BS degree in Management or Management Information Systems and 1 yr. exp. in the job or a related field. Mail resume only to 1901 Ponce de Leon Blvd., Coral Gables, FL 33134. Attention: Mr. Fernando Arena.

Position opening for IT professionals with min. 2yrs industry exp. in (various skills combination reqd.) MQ Series; XML, STX 12, EDI, MED Editor, PDK, DTS, OLAP, RPT, VB Script, Dream Weaver, GRC, AWT, Websphere, JDBC, Visual Interdev FoxPro, Solaris, Unix, SQL Pre-Processor, C, C++, Oracle Web Application Server, MTS, Pro * C, CSS, XSL, CEEDUMP, ES 9000, SynSort, OAS, OEM, CVC, SQR, Peoplesoft, People Tools, WorkFlow, RMI, etc. MS or BS or equiv {Engg. (any) } or CS or Bus. Admin. or rel. field. Travel/ reloc. reqd. Resumes only to HR, 3i People, 1780 Century Circle, Ste 2, Atlanta, GA 30345.

Performing software engineering design, test, analysis, project management and implementation of various computer applications and ERP Applications mainly with an interface of SAP, VIGNETTE, BROADVISION focusing into Financials line of activity (FI, GL, AP, CO, PA,PC modules). Heavy integration into the environments into the logistics and Human Resources. Such customization has to be done with the tools like SAP R/3, BW,ABAP/4, JAVA, UNIX, TCP /IP, C/C++, PL/SQL, VHDL, VISUAL BASIC, COBOL & WINDOWS NT. Must have min. 5 years of experience, 40 hr/wk, competitive salary. Resumes should be sent to 226 Paul St.#204, Pittsburgh, PA-1521. WEB #280986.

Performing software engineering design, test, analysis and implementation of various computer applications for Web based architecture wrt financial Industry. Extensively use of JAVA with EXTRICITY on the web servers like WEBSPHERE and iPLANET. The database like ORACLE 8i and DB2 should be used to retrieve data. Should work with operating systems like UNIX and WINDOWS NT etc. Must have min. 5 years of experience, 40 hr/wk, competitive salary. Resumes should be sent to 226 Paul St.#204, Pittsburgh, PA-15211. WEB #281967.

Senior Consultant needed. Seeking qual. candidates possessing a min. of 3 yrs. rel. work exp. as a computer professional working w/ financial software applications. 2 yrs. of the req. work exp. MUST incl. data warehousing and architecture. Mail res. and sal. req. to Accelerent Partners, Inc. 207 Eastmoor Blvd., Columbus, OH 43209, ATTN: Carey Cheri.

SAS Programmer. Wallingford, CT. Perform database and statistical analysis and management through the development of SAS programs. Responsible for generating reports including tables, plots, graphs, charts and SAS datasets.Through the utilization of SAS tools, analysis and techniques, perform data validation, edit checking and data cleaning to generate clean SAS datasets.Requires: M.S. in biostatistics, public health, math, economics or computer science. 40hrs/wk. Send resume (no calls) to Mr. Keith Shelly, Managing Partner, Smith Hanley Consulting Group, Inc. 1025 Greenwood Blvd, Suite 231, Lake Mary, Florida 32746.

Programmer/Analyst to design, develop and test application software using C, C++, ProC /C++, Forms 4.5, ORACLE, on UNIX and Windows Platforms. Require: BS Degree in Computer Science/Engineering/Science or a closely related field with 2 years of progressively responsible experience in the Job offered or related occupation of Software Engineer. Extensive travel on assignments to various client sites within the US is required. Competitive salary offered. Apply by resume to : Ravi Kandimalla, President, EVEREST COMPUTERS INC., 900 Old Roswell Lakes Parkway, Suite 300, Roswell, GA-30076: Attn: JobCV

Senior Consultant needed. Seeking qual. candidates poss. MS or equiv. and 3 yrs rel. work exp. as a computer professional working w/ financial software applications. 2 yrs. of the req. work exp. MUST incl. business analysis and package system design/implementation. Mail res. and sal. req. to Accelerent Partners, Inc. 207 Eastmoor Blvd., Columbus, OH 43209, ATTN: Carey Cheri.

e-lite companies

e-merging companies

e-ssential companies

e-normous opportunities

IT careers

THE WORLD OF WORK IS CHANGING EVERY WEEK.

LUCKILY, WE ARE TOO!

For the most up to date opportunities and coverage, stay tuned in with us.

IT CAREERS

where the best get better

1-800-762-2977

Advertising Supplement

IT Careers: Diversity more an issue now than ever

For more than a decade, American businesses have worked to make the workplace more diverse, bringing different backgrounds, educations, cultures, ethnicities, age groups and genders to the workplace, yet the challenge remains just as strong as it did a decade ago. What has changed is the explosion of the information technology industry and the opportunities available to women and under-represented minorities. Despite increased attention to diversity in recruiting and retention programs, a shortage exists throughout the IT industry.

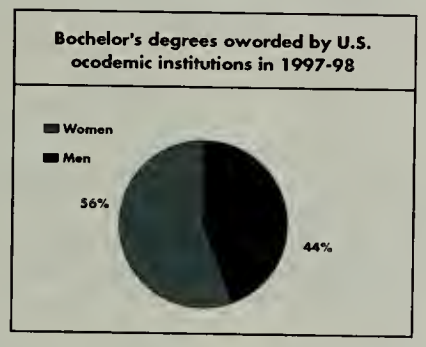
A recent report by a Congressional Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development reports, "If women, underrepresented minorities, and persons with disabilities were represented in the U.S. science, engineering and technology workforce in parity with their percentage in the total workforce population, this shortage could largely be eliminated."

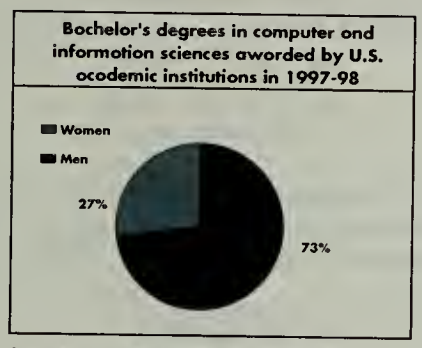
According to Microsoft's senior director of diversity, Claudette Whiting, it is imperative for businesses to be diverse. "There is a critical need for businesses to create a diverse workforce and for our industry to develop a strong pipeline of knowledgeable women and under-represented minorities," she says.

This year alone, more than 600,000 new jobs are projected in information technology, according to the Information Technology Association of America. Microsoft alone is looking to hire more than 5,000 new employees to the company.

Whiting notes that despite the continued growth of jobs in technology, the pipeline of women entering the profession isn't. Just over a decade ago, 37% of the college graduates in computer science and engineering were women. In 1998, the number had fallen to 27%. "The high tech industry is facing a critical challenge in that there's a very small pool of minority and women candidates completing math and science education programs," says Whiting. "We have not prepared the new generation to be able to have the kinds of jobs Microsoft and other companies will have."

Microsoft is committed to attracting talented women to the company and high tech industry at large and is pursuing its commitment on several levels. The first is to engage the business community in the overall issue of women in technology. For example, Microsoft is sponsoring a research project with Catalyst, the nation's leading research organization concerning women in the workplace. The group will host a series of roundtables across the nation with influential men and women to "get at what helps facilitate IT careers for women and what are barriers," explains Whiting.





Source: U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics, 2000.

Other elements of the company's four- part diversity program include programs the can help inspire young girls to take advantage of the range of career opportunities available to them in the technology industry. Microsoft's DigiGirlz program is a camp for young girls that seeks to get them interested in information technology. The company also offers internships not only to women in college, but also to high school girls to get them interested in pursuing majors in math and the sciences. Whiting says the girls don't have enough role models of women in leadership positions in technology, and Microsoft women are working to correct that situation by serving as mentors and being involved.

Another area of Microsoft's support is through the Technology Access Foundation's Alliance Program. It is committed to providing the training and experience necessary for teens of color to achieve careers in technology. The alliance also helps local businesses recruit a diverse workforce from their own community.

"We need businesses across industries to join in this national conversation," adds Whiting. "The lack of females in the IT pipeline has been called a quiet crisis – it's actually a roar at Microsoft."

IDG Recruitment Solutions.

For more job opportunities turn to the pages of ITcareers.

- If you'd like to take part in an upcoming ITcareers feature, contact: **Vice President, Advertising: Janis Crowley**
  155 Bovet Road, Suite 101 San Mateo, CA 94402
  janis_crowley@idg.com or 1-800-762-2977 x7607
  Visit our website at: **www.itcareers.com**

Produced by Carole Hedden

All kinds of people.
All kinds of projects.

At Microsoft, diversity matters. Not just in the way we hire, but in every facet of our operation. Because ultimately, we believe that a diverse workforce will not only enrich our performance and products, but also the lives of our employees, and the very communities in which they live and work.

For more information, visit our Web site. When applying for a position, please indicate Job Code A22y6-0715 in the subject header.

microsoft.com/**careers**/diversity.htm

©2002 Microsoft Corporation. All rights reserved. Microsoft is a registered trademark of the Microsoft Corporation in the United States and/or other countries. Microsoft is an equal opportunity employer and supports workplace diversity

How to Contact COMPUTERWORLD

We invite readers to call or write with their comments and ideas. It is best to submit ideas to one of the department editors and the appropriate beat reporter.

Maryfran Johnson, editor in chief
(508) 820-8179

DEPARTMENT EDITORS

Don Tennant, News editor.....(508) 620-7714
Craig Stedman, assistant News editor.....(508) 820-8120
Julia King, Management editor.....(610) 532-7599
Tommy Peterson, Technology editor.....(508) 620-7729
Mitch Betts, director, Knowledge Centers.....(301) 262-8243

REPORTERS

Bob Brewin, mobile computing/wireless; Intel PCs and servers; health care.....(301) 277-8069
Matt Hamblen, networking; network systems management; e-commerce.....(508) 820-8567
Thomas Hoffman, information economics; IT investment issues; energy.....(845) 988-9630
Lucas Mearian, financial services; storage; IT management.....(508) 820-8215
Linda Rosencrance, general assignment; transportation/carriers.....(508) 628-4734
Carol Sliwa, Microsoft; Web services technologies; application development; retail industry.....(508) 628-4731
Marc L. Songini, ERP; supply chain; CRM; databases; data warehousing; EAI; CA.....(508) 820-8182
Patrick Thibodeau, state/federal government; antitrust; legal issues; politics.....(202) 333 2448
Dan Verton, security; defense and aerospace; travel.....(703) 321-2277
Jaikumar Vijayan, enterprise systems; ASPs/outsourcing; security; manufacturing.....(630) 978-8390
Todd R. Weiss, general assignment; Linux; messaging/collaboration.....(717) 560-5255

OPINIONS

Patricia Keefe, editor at large.....(508) 820-8183
Mark Hall, opinions editor.....(503) 391-1158
Frank Hayes, senior news columnist.....(503) 252-0100

FEATURES EDITORS

Ellen Fanning, special projects editor.....(508) 820-8204
Robert L. Mitchell, technology evaluations editor.....(508) 820-8177
Gary H. Anthes, editor at large.....(703) 536-9233
Jean Consilvio, assistant features editor.....(508) 820-8562

COMPUTERWORLD.COM

Tom Monahan, online director.....(508) 820-8218
Sharon Machlis, managing editor/online.....(508) 820-8231
Ken Mingis, online news editor.....(508) 820-8545
Marian Prokop, online editor at large.....(508) 620-7717
Brian Sullivan, online editor at large.....(508) 620-7780
John R. Brillon, associate art director.....(508) 820-8218
David Waugh, associate art director.....(508) 820-8142
David Ramel, e-mail newsletter editor
Keeley Guillerme, marketing associate/researcher
Peter Smith, Web development manager
Kevin Gerich, Mark Savery, Web developers
Bill Rigby, associate Web developer
Matthew Moring, graphics designer

RESEARCH

Mari Keefe, research manager
Gussie Wilson, research associate

COPY DESK

Jamie Eckle, managing editor/production.....(508) 820-8202
Michele Lee DeFilippo, assistant managing editor/production.....(508) 820-8126
Bob Rawson, Monica Sambataro, senior copy editors
Jacqueline Day, Mike Parent, copy editors

GRAPHIC DESIGN

Stephanie Faucher, design director.....(508) 820-8235
April O'Connor, associate art director
Julie D'Errico, graphic designer
Susan Cahill, graphics coordinator
John Klossner, cartoonist

ADMINISTRATIVE SUPPORT

Linda Gorgone, office manager.....(508) 820-8178
Cheryl Dudek, administrative assistant.....(508) 820- 8178

CONTRIBUTING COLUMNISTS

John Berry, David Foote, Pimm Fox, Michael Gartenberg, Dan Gillmor, Thornton A. May, David Moschella, Bart Perkins, Nicholas Petreley, Fran Quittel

CONTRIBUTING WRITERS

Amy Helen Johnson, Russell Kay, Sami Lais, Kathleen Melymuka, Deborah Radcliff

GENERAL INFORMATION

TELEPHONE/FAX
Main phone number.... (508) 879-0700
All editors unless otherwise noted below
Main fax number ..... (508) 875-8931
24-hour news tip line... (508) 620-7716

E-MAIL
Our Web address is **www.computerworld.com.**
Staff members' e-mail follows this form: **firstname_lastname@computerworld.com.**
For IDG News Service correspondents: **firstname_lastname@idg.com.**

LETTERS TO THE EDITOR
Letters to the editor are welcome and should be sent to: **letters@computerworld.com.**
Include your address and telephone number.

MAIL ADDRESS
PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701

SUBSCRIPTIONS/BACK ISSUES
Subscription rates: U.S., $190/year; Canada, $220/year; Central and South America, $250/year; all others, $295/year
Phone ..... (800) 552-4431
E-mail... circulation@computerworld.com
Back issues ..... (508) 988-7590

REPRINTS/PERMISSIONS
Contact.....Renee Wywadis
Phone .....(717) 399-1900, ext. 172
E-mail .....rwywadis@reprintbuyer.com
Visit **www.reprintbuyer.com** to obtain quotes and order reprints online.

COMPANIES IN THIS ISSUE

Page number refers to page on which story begins. Company names can also be searched at **www.computerworld.com**.

ACCENTURE LTD....1, 6
ACE INA HOLDINGS INC....1
ACTIVE VOICE LLC....32,33
ADVANCED FIBRE COMMUNICATIONS INC....1
ALCATEL....16
AMERIQUEST MORTGAGE CO....7
AMPLIFY.NET INC....40
ANTARA.NET LLC....10
APPIQ INC....40
ARC ADVISORY GROUP INC....29,30
ARIBA INC....10
ASCENTIAL SOFTWARE CORP....29
AT&T CORP....49
AT&T SOLUTIONS....1
AUSTIN LANE TECHNOLOGIES INC....43
AVANTGO INC....43
AVAYA INC....32,33
B2B ANALYSTS INC....20
BALTIMORE TECHNOLOGIES PLC....38
BARRA INC....49
BEA SYSTEMS INC....7
BELL ATLANTIC NETWORK INTEGRATION....1
BLOOMBERG LP....49
BLUE SILICON....33
BMC SOFTWARE INC....12
BORLAND SOFTWARE CORP....10
BURLINGTON COAT FACTORY WAREHOUSE CORP....1
CABLE & WIRELESS INTERNET SERVICES INC....14
CABLE & WIRELESS PLC....49
CALL SCIENCES INC....33
CANADIAN TIRE CORP....7
CAP GEMINI ERNST & YOUNG....7
CAPTARIS INC....32,33
CARNEGIE MELLON UNIVERSITY....54
CELENT COMMUNICATIONS LLC....1
CENTER FOR CREATIVE LEADERSHIP....52
CENTER FOR INTERNET SECURITY....40
CERT COORDINATION CENTER....38
CIMI CORP....18
CISCO SYSTEMS INC....8,16,33
CITIZENS BANK....14
CLOSEDLOOP SOLUTIONS INC....10
COLE HAAN....52
COLLIGO NETWORKS INC....40
COMPUTER SCIENCES CORP....1,8,14
COURION CORP....22
COVANSYS CORP....49
CUTTER CONSORTIUM....62,64
DASSAULT SYSTEMES SA....29
DATASWEEP INC....29,30
DELL COMPUTER CORP....10
DIGIMINE INC....10
DIRECTIONS ON MICROSOFT INC....21
DIRECTV INC....12
DIXON TICONDEROGA CO....12
EGLIN AIR FORCE BASE....32,33
ELECTRONIC DATA SYSTEMS CORP....1,10,22
ELECTRONIC FRONTIER FOUNDATION....20
EMC CORP....10,14
EMERSON ELECTRIC CO....10
ENTRUST INC....38
ERLANGER HEALTH SYSTEM....16
FANNIE MAE....12
FBI....14
FIRST TECHNOLOGY INC....10
FLASH ELECTRONICS INC....29
FORMATION SYSTEMS INC....29
FORRESTER RESEARCH INC....1
GARTNER INC....6,7,14,16,20,22
GENERAL MOTORS CO....1
GOVONE SOLUTIONS LP....21
GREEN MOUNTAIN COFFEE ROASTERS INC....1
HARVARD BUSINESS SCHOOL....52,53
HELWETT-PACKARD CO....1
HENKEL CONSUMER ADHESIVES INC....29
HEWLETT-PACKARD CO....1,8,10,12,21,24
IBM....1,14,20,24,32,49
IDC....10,14
ILLUMINATA INC....1
INFORMATION BUILDERS INC....43
INFORMATION TECHNOLOGY ASSOCIATION OF AMERICA....14
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS INC....6
INTEL CORP....14
INTENTIA INTERNATIONAL AB....82
INTERGRAPH CORP....14
INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS....6
INTERNET ENGINEERING TASK FORCE....10
IOMEGA CORP....40
J.P. MORGAN CHASE & CO....1
J2 GLOBAL COMMUNICATIONS INC....33
JUPITER RESEARCH....25
KRAFT FOODS INC....52
KTG INC....44
LENOX INC....1
LOCKHEED MARTIN AERONAUTICS CO....29
LOTUS DEVELOPMENT CORP....20
LUCENT TECHNOLOGIES INC....16
MANUGISTICS INC....7
MAPICS INC....29
MCCONNELL ASSOCIATES....10
MCDONALD'S CORP....43,44
MERANT....10
MERRILL LYNCH & CO....46
META GROUP INC....6
MI2G LTD....38
MICROSOFT CORP....1,10,14, 20,21,29,32,33,38,40
MORGAN STANLEY DEAN WITTER & CO....8
MULTEX.COM INC....49
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY....8
NAVISION A/S....14
NEC CORP....33
NETLEDGER INC....10
NEW YORK UNIVERSITY....8
NORTEL NETWORKS LTD....18,32,33
NOVELL INC....32
O.C. TANNER CO....21
OPEN SOURCE APPLICATIONS FOUNDATION....20
OPENNETWORK TECHNOLOGIES INC....10
ORACLE APPLICATIONS USERS GROUP....12
ORACLE CORP....10,12
PACKET DESIGN LLC....10
PALM INC....40,43
PEOPLESOFT INC....43
PERSHING....49
PHILIP MORRIS COS....6
POLARIS INDUSTRIES INC....29
PROLOGIC COMMUNICATIONS INC....33
PROVIDENCE HEALTH SYSTEM....1
PROXIM CORP....8
PUMATECH INC....43
PWC CONSULTING....1
REUTERS GROUP PLC....62
ROOT LEARNING INC....53
RPM INTERNATIONAL INC....29
RSA SECURITY INC....38
S1 CORP....14
SALESFORCE.COM INC....10
SAP AG....20,62
SAP AMERICA INC....20
SATYAM COMPUTER SERVICES LTD....49
SECURITIES AND EXCHANGE COMMISSION....14
SERVICE & SUPPORT PROFESSIONALS ASSOCIATION....12
SIERRA WIRELESS INC....43
SITEL CORP....12
SOCIETY FOR INFORMATION MANAGEMENT....8
SSI TECHNOLOGIES....49
STATE COMPENSATION INSURANCE FUND....32,33
STATE STREET CORP....49
STORAGE NETWORKING INDUSTRY ASSOCIATION....12
STORAGENETWORKS INC....12,49
SUN MICROSYSTEMS INC....1,10,24
SYMBOL TECHNOLOGIES INC....44
TANGENT SYSTEMS INC....43
TATA CONSULTANCY SERVICES....49
TAXWARE....21
THE BANK OF NEW YORK CO....49
THE CONCOURS GROUP....46
THE PELORUS GROUP....32,33
THE SANS INSTITUTE....40
THE WORLD BANK....14
TIM BEATY BUILDERS INC....43,44
T-SYSTEMS INC....29
U.S. AIR FORCE....32
U.S. DEPARTMENT OF COMMERCE....8
U.S. DEPARTMENT OF DEFENSE....33,54
U.S. NAVY....22
UNISYS CORP....14,49
UNIVERSITY OF NOTRE DAME....36
VERISIGN INC....38
VIBREN TECHNOLOGIES INC....40
VIEWSONIC CORP....43
VISA INTERNATIONAL INC....22
VOCENT SOLUTIONS INC....22
W.W. GRAINGER INC....52
WAL-MART STORES INC....21,54
WI-FI ALLIANCE....6
WILLIAM L. LYON & ASSOCIATES INC....32,33
WILMINGTON TRUST CO....8
WIND RIVER SYSTEMS INC....10
YAHOO INC....36,49
ZAPTHINK LLC....44

ADVERTISER'S INDEX

Advanced Micro Devices....20, 21, 23 www.amd.com
American Power Conversion....17 www.apcc.com 888-289-APCC
Autonomy....11 www.autonomy.com
Brio....13 www.brio.com
Canon....47 www.imagerunner.com
Computer Associates....4 www.ca.com
Dell....15 www.dell.com
DLTtape Technology....24/25* 320reasons.com
Fujitsu....42 www.netcobol.com
IBM DB2....64 www.ibm.com
IBM E-Infrastructure....50-51 www.ibm.com
IBM Lotus....63 www.ibm.com
IBM x-Series....39 www.ibm.com
InterSystems Corp....28 www.intersystems.com
Iomega....37 www.iomega.com
Microsoft Abilities....26-27 www.microsoft.com
Microsoft Agility....16-19 www.microsoft.com
Nokia....2-3 www.nokia.com
Nortel Networks....55 www.nortelnetworks.com
Oracle Corp....9 www.oracle.com
Premier 100 IT Leaders Conference41 www.computerworld.com/p100
SAP....45 www.sap.com
Storage Networking World Online....48 www.snwonline.com
Sybase....34-35 www.sybase.com
Veritas....31 www.veritas.com

*Regional Select Edition

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

Continued from page 1

On-Demand

going to help users get more value out of their assets and will transition them from a pay-upfront model to a pay-as-you go model, which characterizes any mature industry."

In a speech outlining his strategic vision for IBM over the next few years, Palmisano said the company will deliver the building blocks for this on-demand architecture. Such an architecture could be hosted by IBM or be deployed by companies internally with IBM's assistance, he said.

IBM has created an organization called On-Demand that's focused on developing capabilities in this area through its own research and development and through acquisitions, Palmisano said. The company is opening four On-Demand design centers around the world to help companies test the concept using IBM Web services, Linux and grid computing technologies, he said.

Driving the effort is growing user angst over the complexity of managing IT networks and the gross underutilization of resources that current approaches have created, Palmisano said. "We are seeing a fundamental shift that is irreversible," he said.

On-demand systems like those proposed by IBM will lead to better utilization of computing resources, reduced complexity and lower ownership costs, said William Siegle, CIO at Ace INA Holdings Inc. in Philadelphia.

And they could help businesses drastically reduce the upfront costs for technology, said Mike Prince, CIO at Burlington Coat Factory Warehouse Corp. in Burlington, N.J. "There's always been an obstacle that you don't begin to see the ROI until the thing's deployed," which could be six or nine months down the road, Prince said.

Business Justification

Other IT executives aren't so sure of the cost benefits.

Bob Palmer, vice president of IT at Lenox Inc. in Lawrenceville, N.J., said that with hardware becoming increasingly commoditized, Lenox's strategy has been to buy another ultracheap server when-

Key Enablers

Technologies that are core to an on-demand infrastructure include the following:

- Partitioning
- Grid computing
- Virtualization and workload management tools
- Services provisioning and policy automation software
- XML and the Simple Object Access Protocol

ever it needs extra capacity and then "run it into the ground."

Utility-based models would have to be cheaper than that approach in order to make sense, Palmer said. In addition, instead of server-level monitoring, administrators would have to do more complex measuring and monitoring of processors, disks and memory, which raises ownership cost issues, he noted.

According to Palmisano, an integral element of on-demand systems will be their ability to largely manage and repair themselves.

Software vendor support is also crucial, Palmer said.

"I would not entertain this idea unless the software vendors we use support it," he said. "Right now I have numerous vendors who highly recommend that their software runs on dedicated environments, and some won't even support their software if we run it in conjunction with certain other software."

Missing Pieces

Another concern is that many of the pieces that are needed to make the utility model work are still lacking, said David Rymal, director of technology at Everett, Wash.-based Providence Health System.

For instance, software that allows for the dynamic allocation of computing resources to different applications isn't fully mature, he said.

And "IT funding models will also have to change radically" before IT can be served up as a utility, Rymal said. Providence, for example, buys all of its computing resources, so IT is a capital expenditure for the organization. Moving to an on-demand model would require a change in approach, he explained.

On-demand models are "an oversimplification from a 100,000-foot view of what it takes to make IT work inside companies," said Jim Prevo, CIO at Green Mountain Coffee Roasters Inc. in Waterbury, Vt.

In any case, the concept of on-demand IT services is certainly not new.

For years users have been taking advantage of storage-area networks and technologies such as server partitioning, grid computing and virtualization software to do the sort of resource sharing promised in the on-demand world.

IBM's own "autonomic" computing technologies, its grid computers and its eLiza initiative to build self-healing, self-managing hardware and software are already being used to deliver some of the capabilities promised by on-demand systems. The challenge now is to merge these technologies into a single architecture encompassing hardware, software, network systems and middleware.

Meanwhile, vendors such as Hewlett-Packard Co. and Sun Microsystems Inc. have been touting the concept as well. Sun, for instance, recently announced a project called N1 under which it's developing technologies that will allow companies to pool data center resources such as servers, storage systems and networks and operate them as a single entity.

"At a broad level, we consider the IBM announcement as an endorsement of a vision we have been executing on" for years, said Shahin Kahn, a director at Sun.

HP sells a technology called Utility Data Center that allows companies to trade and share data center resources for running multiple applications. The company also offers a utility-like option in which users can pay for IT resources on a usage basis. And the option for capacity upgrades on demand that's available on HP's high-end Superdome Unix servers lets users turn on additional processor capacity when needed and switch it off when it's not.

"It lends a lot more credibility to our efforts when our competition talks about the same thing we have talked about for years," said Nick van der Zweep, a director at HP.

Reporter Todd Weiss contributed to this report.

Continued from page 1

Economics

pany reported earnings of $1.7 billion in its third quarter, year-to-date revenue of $57.5 billion is more than 5% lower than it was a year ago.

IBM blamed the decline on the slowdown in IT spending caused by the recession. But growing commoditization in the hardware space and the vast amounts of excess capacity following Y2k remediation efforts and investments in dot-com buildouts are also squeezing profits and new revenue, analysts said.

"The vendors know that the Y2k and dot-com buildouts are not going to happen again," said Jonathan Eunice, an analyst at Illuminata Inc. in Nashua, N.H.

Instead, the greater short-term opportunities lie in helping companies make better use of their underutilized capacity, he said.

IBM is therefore adopting a model in which it can get "recurring revenues" from delivering and enabling IT as a more efficient, utilitylike service, said Sam Albert, an independent consultant in Scarsdale, N.Y.

Big Blue's Edge

Increasingly, the opportunities will lie not in providing hardware, software or even traditional IT services, but in helping companies manage entire IT infrastructures more cost-effectively, said Ted Schadler, an analyst at Forrester Research Inc. in Cambridge, Mass.

Though rivals such as Hewlett-Packard Co. and Sun Microsystems Inc. are also being driven to the same market for the same reasons, IBM is in a better position to execute the strategy, Schadler said.

The company's vast technology portfolio, global services capabilities and business consulting skills acquired through its $3.5 billion purchase of PwC Consulting give it an important edge, he said.

"IBM is also the only company that can take the capital risk" involved in delivering on the strategy, Schadler said.

> **"I would not entertain this idea unless the software vendors we use support it."**
>
> **BOB PALMER,** VICE PRESIDENT OF IT, LENOX INC.

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement #40063800. CANADIAN POSTMASTER: Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published weekly; except a single combined issue for the last two weeks in December by Computerworld, Inc., 500 Old Connecticut Path, Box 9171, Framingham, Mass. 01701-9171. Copyright 2002 by Computerworld Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus 50 cents per page, is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 100 copies) and permission to reprint may be purchased from Rey Trynovich, Computerworld Reprints, c/o Reprint Management Services, Greenfield Corporate Center, 1811 Olde Homestead Lane, Lancaster, Pa., 17601, (717) 399-1900, Ext. 124. Fax: (717) 399-8900. Web site: www.rmsreprints.com. E-mail: rtry@rmsreprints.com. Requests for missing issues will be honored only if received within 60 days of issue date. Subscription rates: $5 per copy: U.S. – $190 per year; Canada – $220 per year; Central & So. America. $250 per year; Europe – $295 per year; all other countries – $295 per year. Subscriptions call toll-free (800) 552-4431. POSTMASTER: Send Form 3579 (Change of Address) to Computerworld, PO Box 512, Mount Morris, Ill. 61054-0512.

BPA ABM

FRANK HAYES ▪ FRANKLY SPEAKING

(Too) Easy Access

ON THURSDAY AFTERNOON, Oct. 24, Swedish software vendor Intentia International AB uploaded its financial results to its Web server more than an hour before the company was scheduled to announce them officially. Minutes later, the Reuters news service found the information there and broke the news immediately — sending Intentia executives scrambling to release it themselves. Last Monday, Intentia filed a criminal complaint with the Swedish police, accusing Reuters of breaking into its Web server.

And how did Reuters hack into Intentia's financial data? By typing a URL into a Web browser.

Yep, that's it. Intentia initially claimed the financial results were protected with a 40-character password. But after Reuters denied using any passwords to get the data, Intentia changed its story, saying just that the financial results were in a "private" area of the Web server and there was no official link to them.

In other words, the financial results — which by law weren't supposed to be made available on the Internet before they were also released to the Swedish stock exchange and newspapers — weren't actually protected at all. The Reuters "break-in" consisted of guessing the right file name, based on announcements of previous Intentia results.

And anyone could have made the same guess.

OK, if you're in a corporate IT shop, you're probably rolling your eyes right about now. You know Intentia shouldn't have left confidential information unprotected. You can probably even recite the ways it could easily have been kept secure. For example, by keeping it on the Web server in encrypted form, and only decrypting it at the last minute. Or by giving it a highly random, hard-to-guess file name that would only be changed to a conventional name at the last minute. Or by using file permissions to prevent the file from being accessed, and changing them only at the last minute.

Then again, the easiest way to protect that information would have been simply to not upload it to the Web server until the last minute. Because if it's not on the server, it can't be on the Web.

Seems obvious, doesn't it? But it wasn't obvious to the investor-relations people at Intentia — a company that sells "e-collaboration" software and plans to get into Web services, so you'd think its employees would have a handle on this newfangled Internet stuff.

Nor is it obvious to plenty of other users who really do have the idea that as long as there's no official link to it, information on a Web server is safe. So they trust the Web server as a staging area, or a test bed, or a convenient place to put presentations and demonstrations, some of which contain proprietary or confidential information. And they put that information up long before it's required — and leave it there long after it's no longer needed.

Want to do them — and yourself — a favor? Scan your company's Web servers. Find the files that aren't linked to your public Web site. Then track down their owners and remind them that whatever they put on a Web server is accessible to anyone on the Internet.

Point out that if someone on the Internet can guess the URL of a piece of business information, even if it's not linked, it's not safe. And that's true whether the information is financial data, marketing plans or personnel records, and whether the guesser is a reporter, an employee, an investor or a competitor.

And if they think it can't happen to them, tell them about Intentia. And remind them that *your* CEO probably isn't desperate enough to call the cops if proprietary information leaks out by way of unnecessary, unlinked files on your company's Web servers.

But he'll probably know who's guilty. ◗

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com**.

Bite Your Tongue

Clueless user gets an e-mail virus pretending to be from sysadmin pilot fish, with the message "Please try my new game." He clicks to open it, but the PC's antivirus software blocks it and tells him to notify sysadmin. "I explain what happened, scan the computer and tell him not to worry, his system is virus-free," says fish. "So," asks user, "can I play that game now?"

SHARK TANK

What a Crazy Idea

This user's PC crashes whenever her screen saver kicks in. Sysadmin pilot fish turns off the screen saver, and the crashes stop. But a few weeks later, user complains the problem has returned. "Rats! I really thought we fixed it by turning off your screen saver," says fish. "Well, I turned it back on this morning," user admits. Fish: "Try turning it back off." User, grumbling: "I don't see how *that* will fix anything."

Exactly

Programmer with a less-than-sterling reputation makes small changes to a report – after which it won't run, no matter what he does. "So he escalates the issue to the IT developer support organization and attempts to make it our problem," says pilot fish who handles the call. "What's the problem?" programmer asks fish. "The program was working before I fixed it."

Now Fix the Fix For the Fix

This company's filtering software effectively blocks improper Web use from the factory floor, says IT pilot fish – until a restructuring ties the factory to the parent company's Internet connection, which won't block any Web access. "Now management wants to install monitoring software on each PC," grumbles fish. "Of course, they also want to make everyone local administrators on their PCs – which means they can disable any software that's installed."

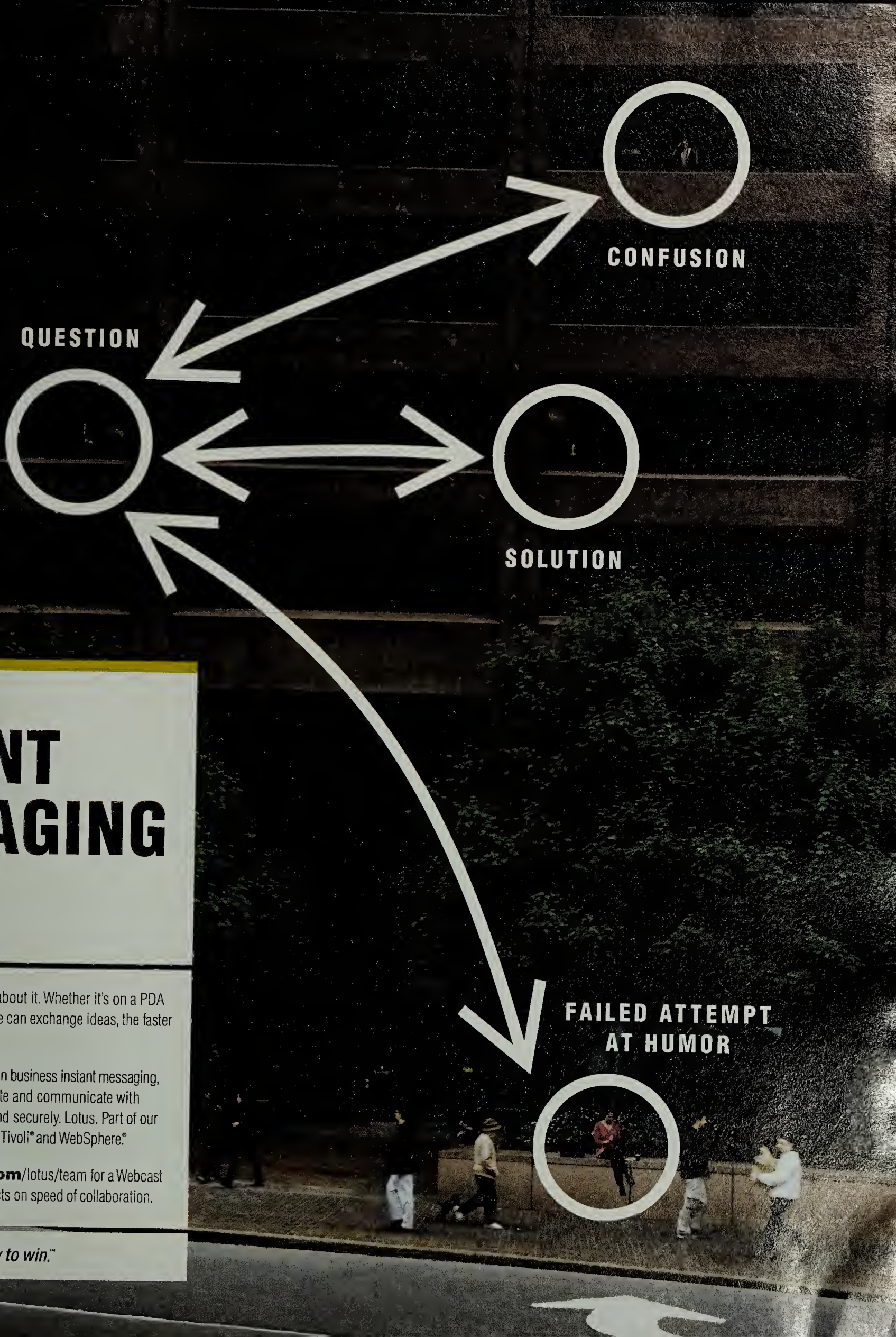
Ya Think?

Prospective employee is interviewing for this company's Internet group. "During the course of the interview, the subject of the Internet came up," says pilot fish who sat in on the session. "The interviewee replied, 'That Internet thing – I think it might catch on.' "

That Might Help

Remote user calls help desk: She gets an error message whenever she tries to access an in-house estimating system. Problem is escalated to developer pilot fish, and he tries everything he can think of, but nothing works. Finally, fish suggests that user ship her PC back to central IT. User's request: "While you have my machine, can you remove the virus that's on it?"

FEED THE SHARK! Send your true tale of IT life to **sharky@computerworld.com**. You snag a snazzy Shark shirt if we use it. And check out the daily feed, browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky**.



IBM

IBM, DB2, Lotus, Sametime, Tivoli, WebSphere, the e-business logo and *e-business is the game. Play to win.* are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. © 2002 IBM Corporation. All rights reserved.

Lotus. software

INSTANT MESSAGING PLAY

1] WIN WITH SPEED: No question about it. Whether it's on a PDA or a PC, the faster your workforce can exchange ideas, the faster they can act on them.

2] WIN WITH LOTUS: As the leader in business instant messaging, Lotus Sametime® helps you locate and communicate with the people you need, instantly and securely. Lotus. Part of our software portfolio including DB2,® Tivoli® and WebSphere.®

3] MAKE THE PLAY: Visit **ibm.com**/lotus/team for a Webcast on instant messaging and its effects on speed of collaboration.

e-business is the game. Play to win.™

DB2 software

NEW DB2. A SELF-STARTER IN THAT SELF-MANAGING, SELF-HEALING SORT OF WAY.

What keeps databases in game shape? DB2 v8, the most advanced self-managing database across Linux,® UNIX® and Windows.® Turbocharged querying and tuning saves time, resources and pushes productivity skyward. And, no matter what form your data is in, it lets you access, analyze and manage it. DB2. It's part of the software team that includes Lotus,® Tivoli® and WebSphere.® Learn more at **ibm.com**/db2/new

*e*business is the game. Play to win.™

IBM, DB2, Lotus, Tivoli, WebSphere, the e-business logo and *e-business is the game. Play to win* are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. Linux is a registered trademark of Linus Torvalds. UNIX is a registered trademark of The Open Group in the United States and/or other countries. Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries. © 2002 IBM Corporation. All rights reserved.